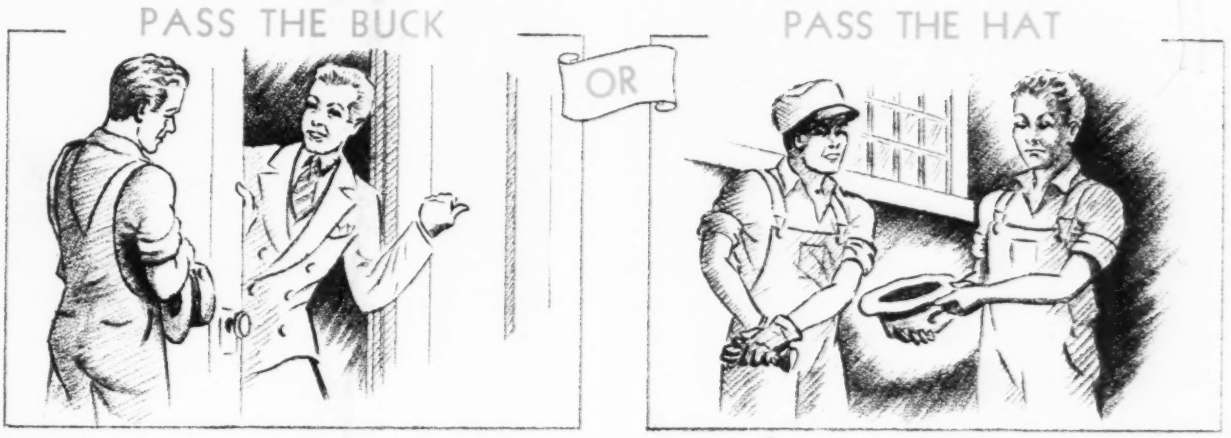
COTTON

AUGUST, SERVING THE 1939

Textile Industries

Most Modern Industrial Plants No Longer...



...when Emergencies Hit their Employees

For they have discovered the advantages of the scientific and economically sound Group Welfare Insurance Plan that stands instantly ready to meet such emergencies caused by sickness, accident or death among employees, or to members of their families.

The Provident for over fifty years has been building such plans "to order", designed to meet the exact needs of a particular plant.

Let us bring this experience to bear upon your welfare problem. There is no obligation involved.

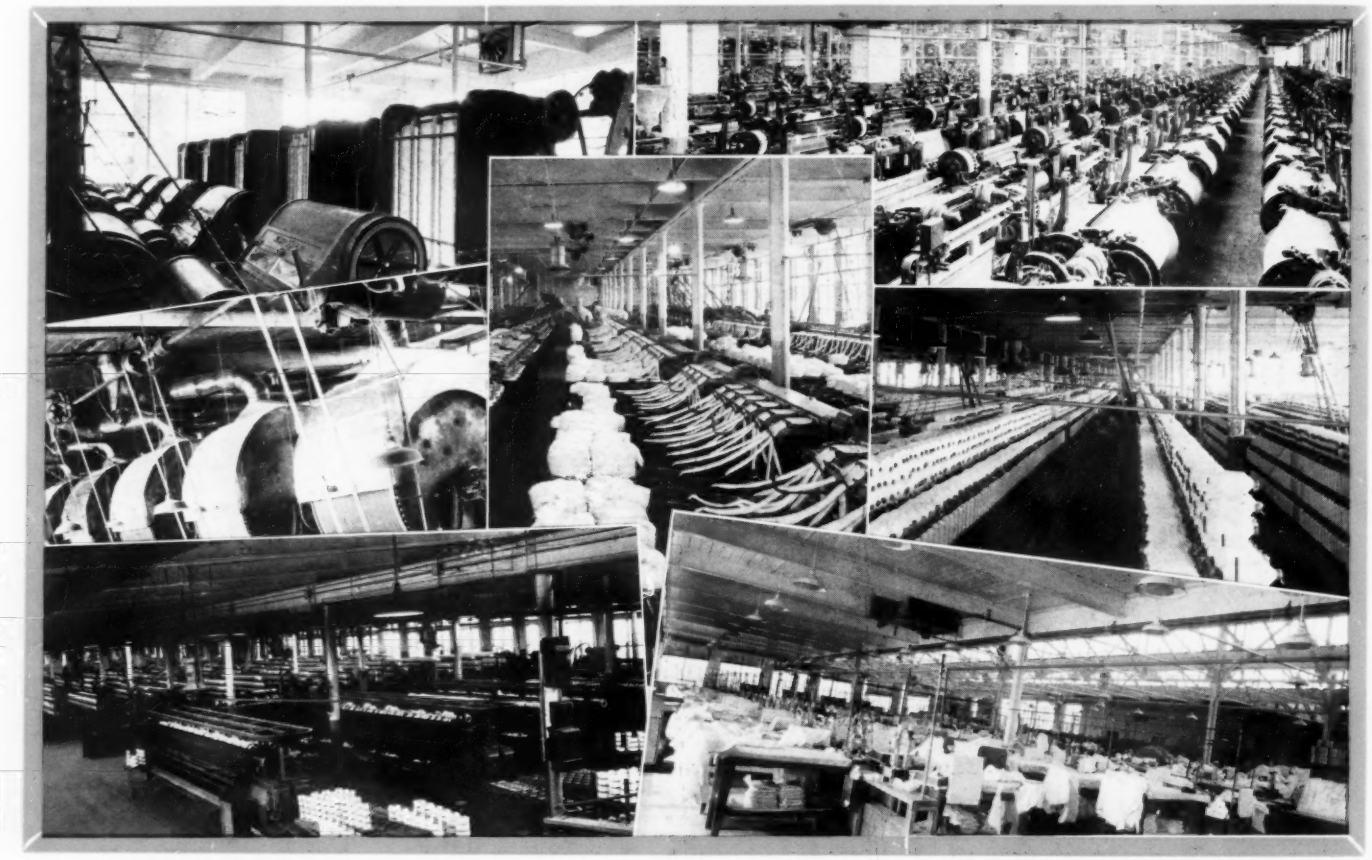
LIBRARY OF CONGRESS AUG 19 1939

Such a Provident Group Welfare Plant can help solve financial burdens of employees—**without cost to employers**—by meeting the extra expenses caused by

- Death in family
- Loss of time due to accident or sickness
- Hospitalization or operation when necessary
- Aiding dependents upon death of employee

PROVIDENT
LIFE AND ACCIDENT
INSURANCE COMPANY
CHATTANOOGA, TENNESSEE

Specialists in Group Welfare Protection Plans for Over a Half-Century



MODERNIZATION PROVES ITSELF

Experience demonstrates the wisdom of careful analysis and planning for modernization—to take full advantage of air-conditioning, scientific lighting and other modern methods, in addition to the benefits of efficient plant layout and new machines.

Broad engineering experience has placed us in a position to work with our clients for maximum return from each dollar invested in such a program.

ROBERT AND COMPANY
ATLANTA INCORPORATED GEORGIA
Architects and Engineers

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What Do You Feed Your Looms?

What a Man Eats Determines How Long He Will Live and How Much Pep He Will Have

Once Man Ate Everything—and Called the Doctor

A Wiser Generation Discovered that Diet is the Magic Wand to Put Off the Day of the Doctor's Call

Your Looms Are Like Men

What You Feed Them in the Way of Repair Parts Determines How Long They Will Live and How Much Pep and Efficiency They Will Have on the Job of Earning Profits for Your Mill

The Daily Grind Takes Something Out of Every Man and Every Loom

This Something that is Gone Must be Replaced

The Proper Diet for Draper Looms is a Diet of Draper Loom Repair Parts

Any Other Diet Will Make Your Looms Less Efficient

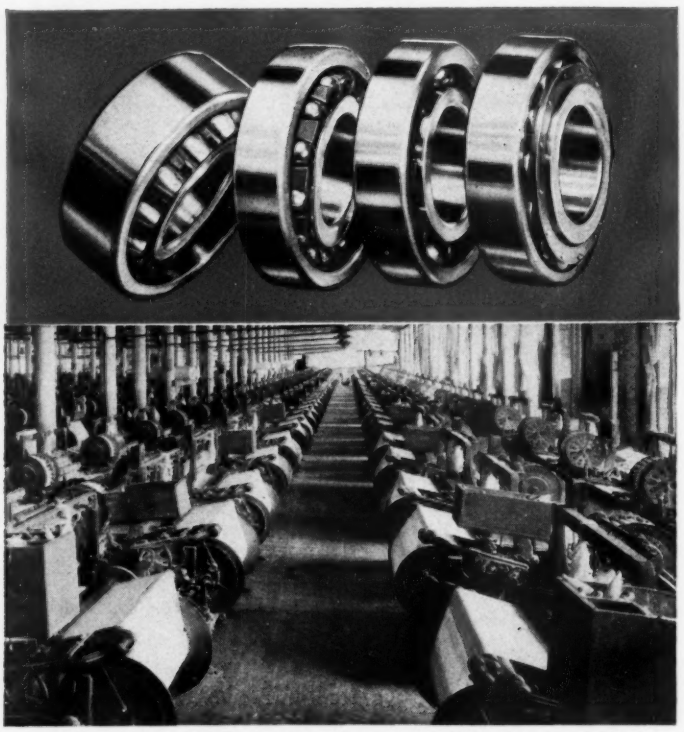
You Buy Draper Looms
Keep Them Draper Looms

DRAPER CORPORATION

Atlanta Georgia Hopedale Massachusetts Spartanburg S C

Ball and Roller Bearings

NOW FREE FROM GUMMING



The bearings illustrated above are shown courtesy S K F Industries, Inc.

IF YOUR ANTI-FRICTION BEARINGS GUM UP and cause trouble, it's sure evidence that they are not getting the right lubricant.

To remain anti-friction, ball and roller bearings require lubricant especially made for them...Texaco Starfak Grease.

Starfak is stable, doesn't break down, separate, leak out. It helps to seal the bearing against foreign matter. Starfak maintains its consistency over wide temperature ranges, assures low starting and running torque, under all operating conditions.

Trained lubrication engineers will gladly cooperate in selecting and applying Texaco Lubricants for any purpose. To get this engineering service, phone the nearest of our 2229 warehouses, or write:

The Texas Company, 135 E. 42nd St., New York City, N. Y.

NEW!

for Spindle Lubrication

A scientifically refined oil from the heart of selected crudes, designed to reduce power consumption over a long period, with freedom from gumming, fogging.

TEXACO SPINDURA OIL AA

PERFECTED LUBRICATION FOR TEXTILE SPINDLES

TEXACO REG. T.M.

TEXACO STARFAK

Spic and Span and RAW

Each fiber immaculate — every particle of foreign matter removed — when you've Degummed, Scoured or Kier Boiled with TSPP

Wherever it has been investigated in the textile industry, there has been enthusiastic acceptance for Warner Tetra Sodium Pyrophosphate because of its brilliant performance in boil-off operations.

The use of TSPP in combination with or to replace other agents, transforms water into a solution of limpid clearness and softness. Makes it *wetter,* for penetration. Gives it *high detergent value* for cleansing.

Calcium and magnesium are suppressed and inhibited by TSPP. Held in suspension in the solution, these insolubles do not flocculate, form scum or precipitate to deposit on the goods being cleaned. And TSPP has the unique property of remaining stable. It does not revert to orthophosphates under the sustained high temperatures of boil-off operations.

Bland, active, TSPP has an ideal pH of about 10, will not attack fibers or alter their composition. It leaves them immaculate — as completely intact as they are perfectly clean.

The prospect of definitely improved results with reductions in processing costs may interest you in investigating Warner TSPP. We'll be very glad to extend the use of our facilities of technical data and advisory cooperation as well as to furnish samples and make price quotations. There is no obligation, of course.

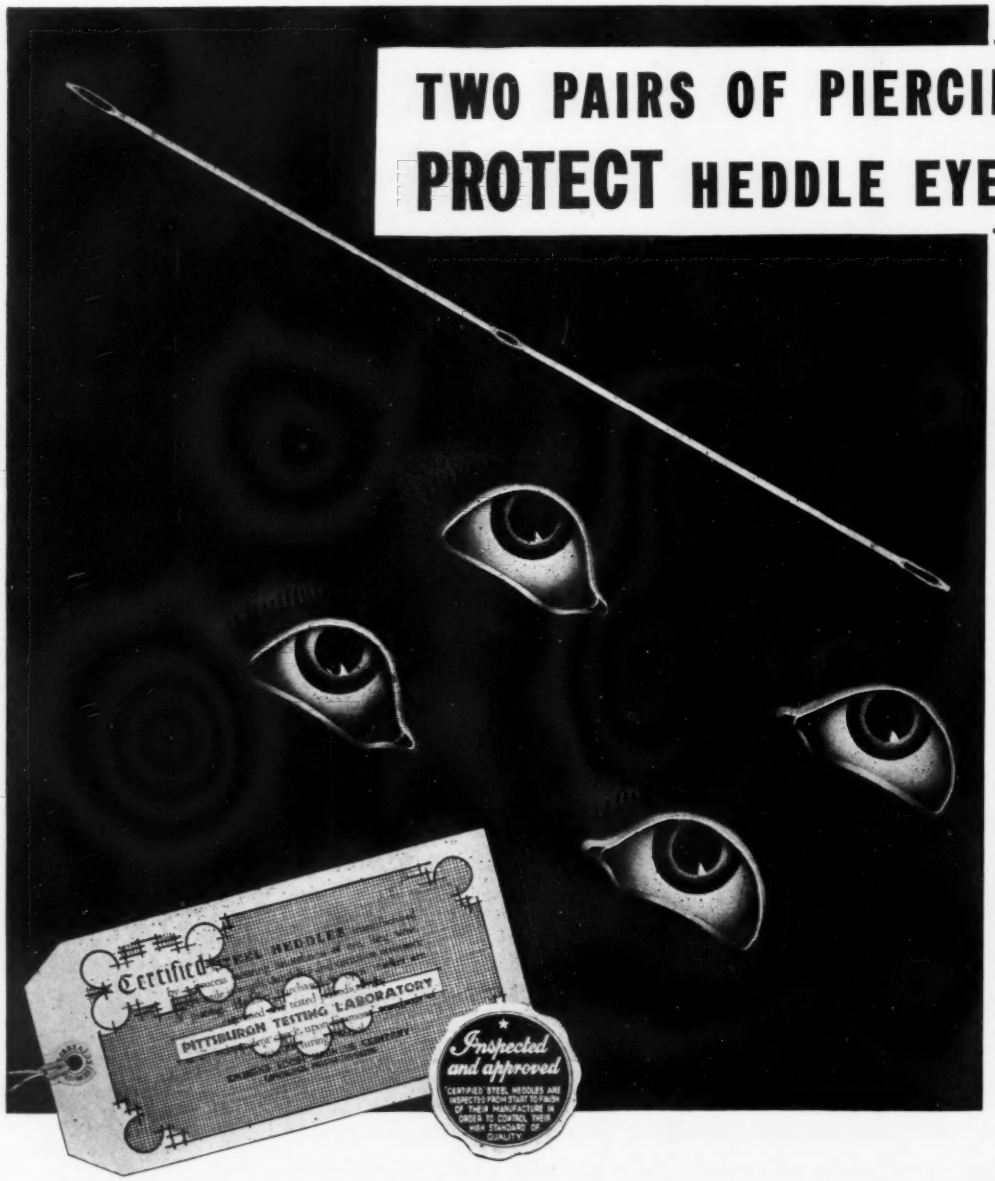
CHEMICAL **WARNER** COMPANY

DIVISION OF

WESTVACO CHLORINE PRODUCTS CORPORATION

CHRYSLER BUILDING, NEW YORK, N. Y.

TWO PAIRS OF PIERCING EYES PROTECT HEDDLE EYES FOR YOU

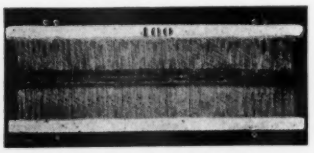


ALL day long the watchful eyes of Emmons inspectors check the unvarying high quality of "Certified" Steel Heddles. Rigorous tests for eye-smoothness, strength, flexibility, and thoroughness of plating, must be met before heddles get the "Inspected & Approved" tag and are ready for shipment.

Another pair of eyes besides our inspector's, regularly checks the four above mentioned qualities of Emmons "Certified" Heddles. This occurs in the Pittsburgh Testing Laboratory, where Emmons steel heddles purchased at random in the open market are subjected periodically to exacting tests.

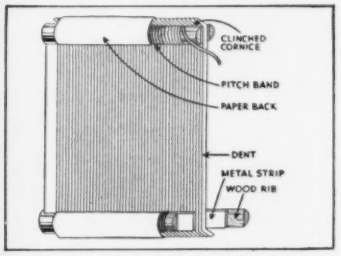
These pairs of eyes, the seal and "Certified" tag, are your guarantors of consistently top-notch heddles. Buy Emmons "Certified" Steel Heddles and be free from troubles. Quick delivery.

THE WEAVER'S CORNER



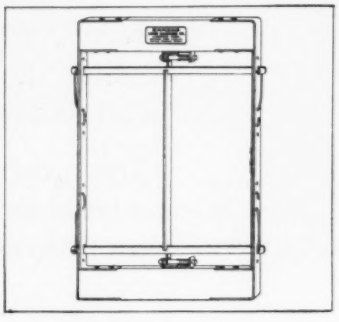
CHAFELESS CORD COTTON HARNESS

Long staple cotton—5 coats of special varnish—48 hours' baking—mean extra strength, extra smoothness and absolute humidity protection.



FLEXBAC REEDS—Born of Modern Engineering

A *full inch* of additional flexing distance—much *quicker* flexing back of the dents than in ordinary pitchband reeds—give you considerably longer trouble-free reed life.



NEW PATENTED BRACE BAR

Brace bar locking device permits quick removal without interfering with heddles or warp ends. Rigid assembly — no sway in any direction.

Emmons

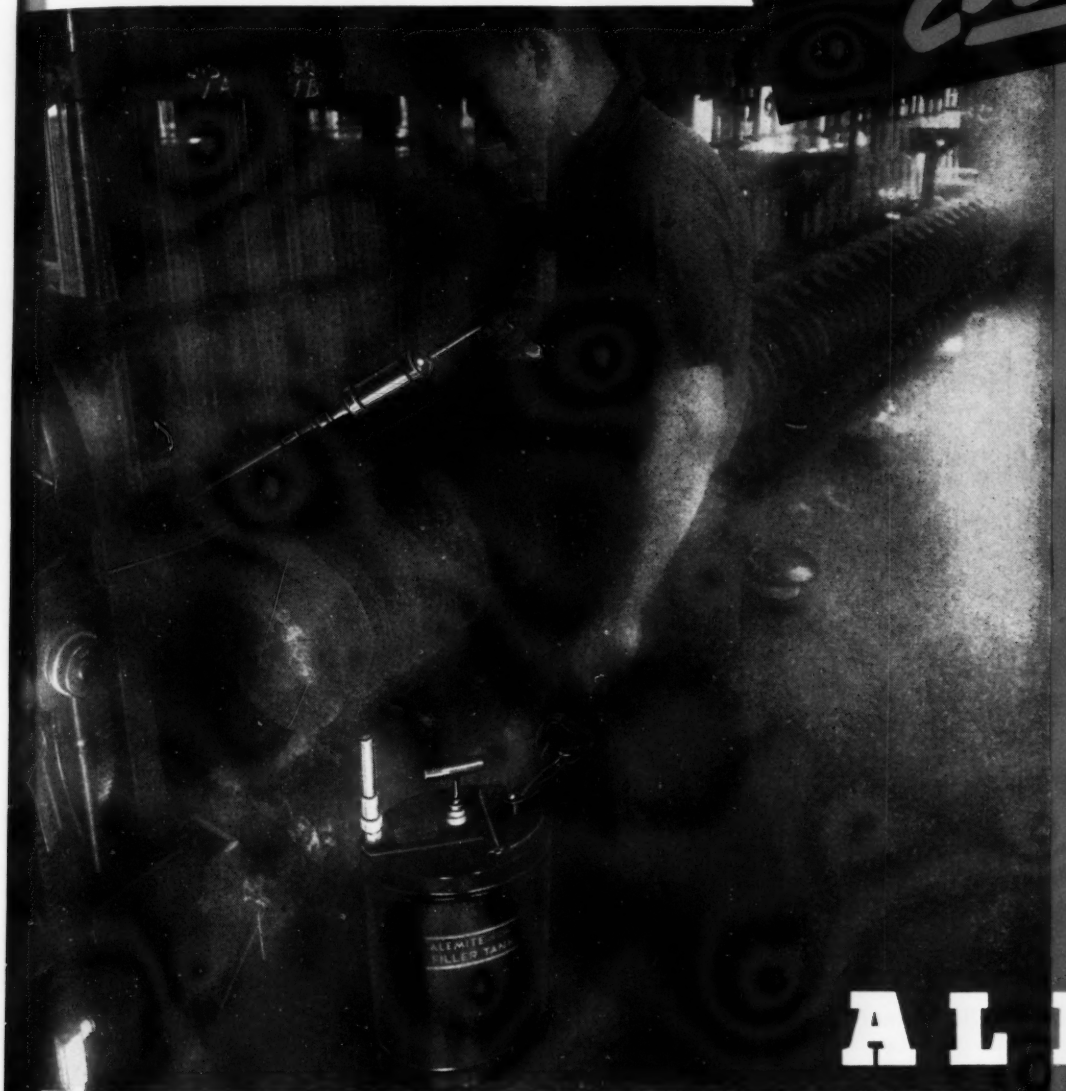
EMMONS LOOM HARNESS COMPANY
Lawrence, Massachusetts · · · Charlotte, N. C.

"CERTIFIED" STEEL HEDDLES · MULTIPLIED YARN SPACE REEDS · CHAFELESS CORD COTTON HARNESS

Narrow Fabric Looms in Big Eastern Mill Now Get . . . .

ALEMITE EVERY 3 WEEKS *Instead of Oiling Every Week!*

Here's how the crank arm of a Crompton & Knowles narrow fabric loom is lubricated easily, quickly, without contamination—once every three weeks.



"Well Satisfied with Alemite Equipment and Lubricants"

Says Master Mechanic

"Alemite Lubrication is saving us one full day each week," says the master mechanic of this leading eastern mill (name on request), "and *we are well satisfied with the performance of both* Alemite Lubricants and Alemite Equipment."

And that's the story you hear throughout the textile industry, *in the hundreds of plants where Alemite Guns and Fittings have replaced old fashioned oil cans and oil holes*—and where Alemite Lubricants are now used in place of fluid oil which so often causes wasteful contamination of product and machines.

This mill uses Alemite Hydraulic Hand Guns to put lubricant where it belongs—*into the bearings rather than on machines* and products! For extra time saving, the Alemite Filler Tank is used, *permitting fast, easy re-filling of the hand gun* without making a trip back to the drum. From barrel to filler tank to gun to bearing, the lubricant is never exposed, never handled, always kept clean and safe!

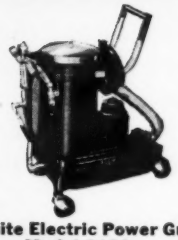
There's an Alemite Gun, power or manually operated, to fit your own needs exactly. Let us show you *how it can pay for itself in a short time* through time saved, contamination avoided, and more efficient operation. Write today for our new industrial catalog.

ALEMITE

REG. U. S. PAT. OFF.

WORLD'S LARGEST MANUFACTURER OF LUBRICATION PRODUCTS

A Division of Stewart-Warner Corporation, 1884 Diversey Parkway, Chicago, Ill. Stewart-Warner-Alemite Corporation of Canada, Ltd., Belleville, Ontario



Alemite Electric Power Gun Model 6190

Holds 25 lbs. of plastic lubricant; delivers 12 oz. per minute under pressure of 4500 to 5000 lbs. per sq. in.; heavy duty universal electric motor; easily portable; complete with hose and cord.

Alemite Air-Operated Power Gun Model 6184

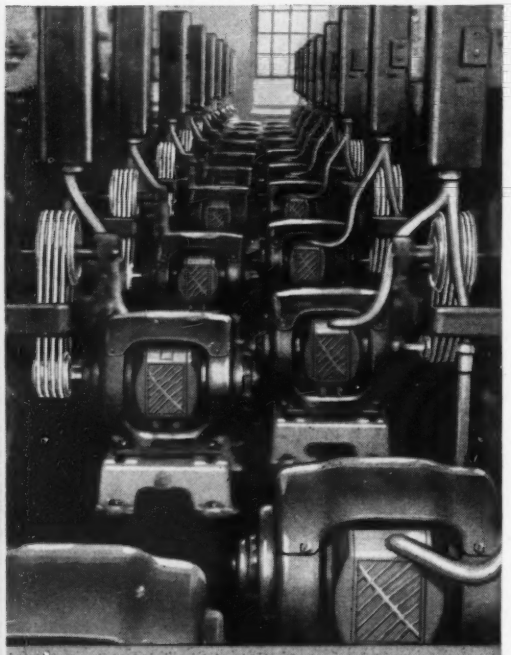
Holds 25 lbs. plastic lubricant; delivers 16 oz. per minute at 150 lbs. air pressure; develops 33 times air pressure used (80 to 200 lbs.); easily portable; complete with hose and necessary adapters.

Alemite Filler Tank Model 6425

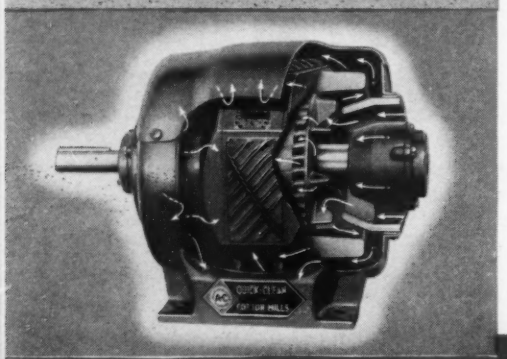
Permits easy, fast loading of Alemite Hand Guns without exposing lubricant to contamination. Holds 35 lbs. Pumps 1 pound to each 7 strokes.

SAVE REPAIR EXPENSES PRODUCTION SCHEDULES POWER COSTS!

MONEY SAVING FACTS ON QUICK-CLEAN MOTORS



IN THIS SOUTHERN TEXTILE MILL, Allis-Chalmers cool running Quick-Clean Motors and high efficiency Texrope Drives are doing a money-saving job — in reducing power costs . . . repair expenses . . . in keeping their production schedules steady!



HERE'S THE QUICK-CLEAN PRINciple! Dust laden air drawn into the motor is ejected at sides. Roomy unobstructed passages and glass-like surfaces make it impossible for lint and dust to adhere!

Use the Motor that's Tailor-Made to Save You Money! Read How the Allis-Chalmers Quick-Clean Solves Textile Motor Problems!

Are you having trouble with your motors clogging with lint, dust or fly? Do these motor failures break up your production schedule . . . cause you unnecessary losses?

If so, it's probably because you aren't using the right kind of motor . . . a motor that has been designed especially to meet the toughest textile operating conditions . . .

That motor is the Allis-Chalmers Quick-Clean Motor — tailor-made for your industry!

For when you use Quick-Clean Motors in your mill, you break forever the threat of shutdowns due to clogged motors! No lint or fly can adhere to Quick-Clean's smooth, hard stator surfaces. All working parts are dust-sealed. And best of all — large, unobstructed air passages eject harmlessly the lint-laden air as fast as it enters.

Remember, too — the Quick-Clean Motor has all the Full Measure features of construction that are a part of Allis-Chalmers Lo-Maintenance motor reputation...the results of over 90 years of meeting the problems of industry.

Quick-Cleans Save You Money!

These features include such developments as indestructible rotor . . . distortionless stator . . . high carbon steel frame . . . husky construction throughout. Combine these advantages with the exclusive Quick-Clean principles and you get a motor that does its job better . . . costs less to operate . . . gives you years of trouble-free service.

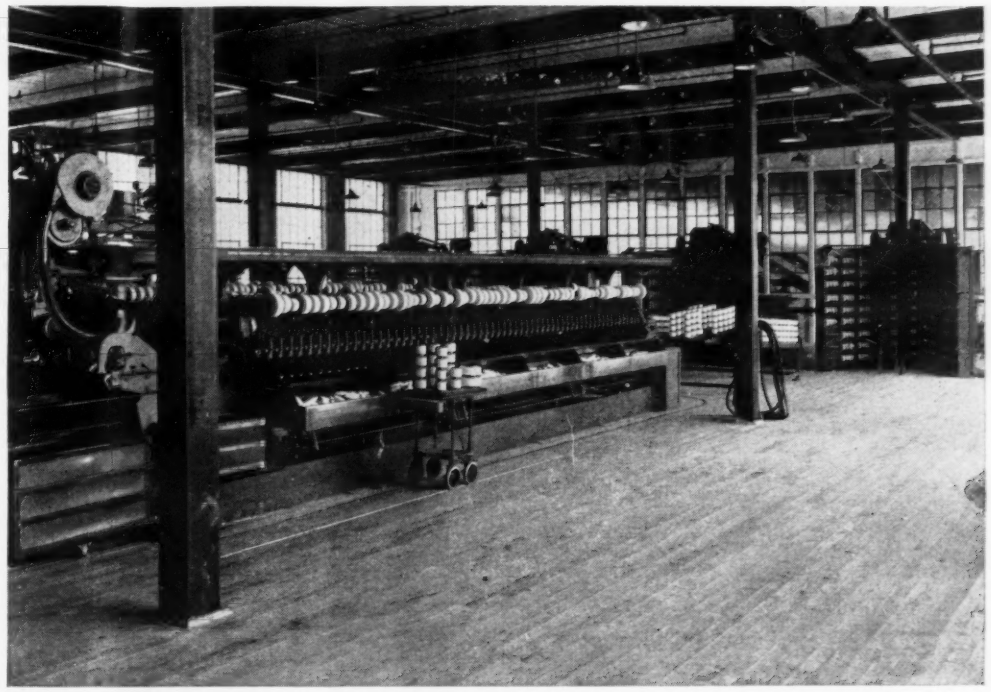
Be sure you meet textile conditions with the motor that's built to Save You Money! For complete details, call the district office near you, or write direct to Allis-Chalmers, Milwaukee, Wisconsin.

1118

ELECTRICAL DIVISION

ALLIS-CHALMERS

MILWAUKEE · WISCONSIN



Section of the new extension in the Joanna Cotton Mills, Greenville, S. C., showing a 3½" face second grade Northern Hard Maple Floor, which Fiske-Carter Construction Co., Greenville, S. C., says "is used because it is noted for longevity and resistance to splintering."

"Northern Hard Maple Flooring is Standard Practice with Us in Textile Mills," *say Lockwood Greene Engineers, Inc.*

"Standard Practice!" . . . These two words sum up the experience of engineers with Hard Maple in mills. Engineer after engineer says: "We always use Hard Maple in textile mills." There is no mystery about this performance.

For MFMA Maple checks on *all* counts for mills. So tough-fibred, tight-grained, it is remarkably resistant to abrasion — will not sliver, splinter, or develop ridges, even under the wear of heavy steel-castered mill trucks. Its lasting smoothness speeds up traffic, creates no dust to injure machinery, and, properly finished, requires brushing alone to clean. It simplifies alterations, machinery shifting and renewal.

Employees, too, find Hard Maple ideal. Light-reflecting and sound-absorbing — warm, dry and resilient—clean and sanitary. It slows up fatigue, protects health, pleases the eye—in every way contributes to workers' comfort, efficiency, good will.

Everybody's happy when you lay MFMA Hard Maple—architect, builder, employee, and owner. You can make sure your flooring is genuine Northern Hard (MFMA) Maple, under Association grade supervision and guarantee. This is simply done, by specifying MFMA* Maple and looking for this association trademark on the flooring you receive.

• • •

See our catalog data in Sweet's, Sec. 11/77. Write for folder describing heavy-duty finishes for old or new floors, which seal Maple's surface and further reduce cleaning costs.

**To be sure of Association guaranteed grading, specify and look for the MFMA trademark (indented and stamped). The following manufacturers are licensed to use it:*

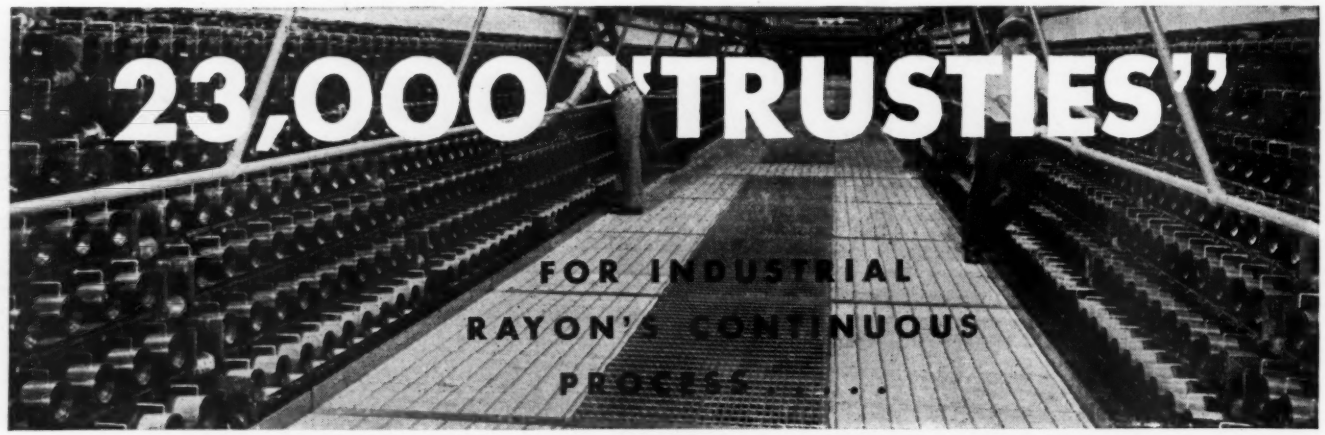
•

Beck, August C. Co., Milwaukee, Wis.
Brown Dimension Co., Manistique, Mich.
Bruce, E. L. Co., Memphis, Tenn. (Mill at Reed City, Mich.)
Connor Lumber & Land Co., Laona, Wis. (Sales Office, Marshfield, Wis.)
Farrin Lumber Co., M. B., Cincinnati, O.
Holt Hardwood Co., Oconto, Wis.
Kerry & Hanson Flooring Co., Grayling, Mich.
Kneeland-Bigelow Co., Bay City, Mich.
North Branch Flooring Co., Chicago, Ill.
Oval Wood Dish Corp., Tupper Lake, N. Y.
Robbins Flooring Co., Rhinelander, Wis.
Stephenson Company, I., Wells, Mich.
Wells, J.W. Lumber Co., Menominee, Mich.
Wisconsin Land & Lbr. Co., Hermansville, Mich.
Yawkey-Bissell Lumber Co., White Lake, Wis.

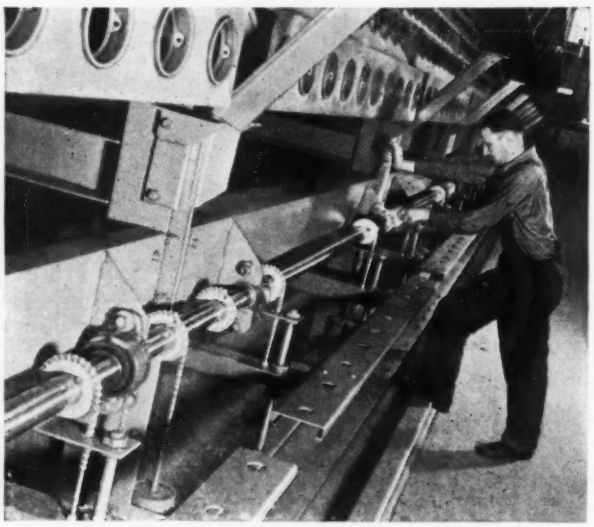
Floor with
MFMA Maple

NORTHERN HARD

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1794 McCormick Building, Chicago, Illinois

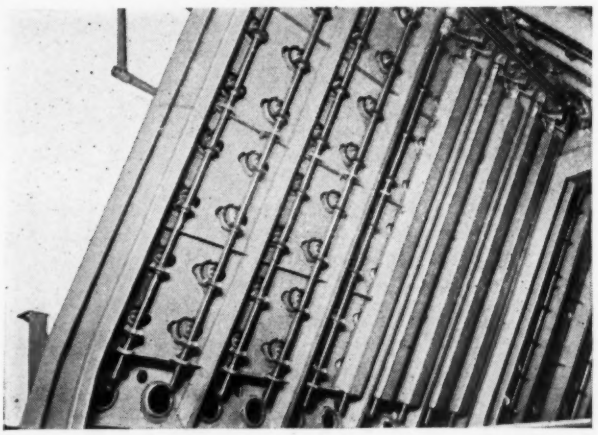


As you read the fascinating story of Industrial Rayon Corporation's new Painesville plant, you may well ask yourself, "What's the answer to such efficiency . . . of 6½ minutes from spinneret to twister . . . of a continuous process that can operate uninterrupted 24 hours a day, 365 days a year?" * * There are more than 23,000 points in Industrial Rayon's ninety-six giant spinning machines where absence of friction and unfailing dependability called for a "trusty" bearing support . . . with the result that Fafnir's famous Wide Inner Ring Ball Bearings were specified.



2000 OF THESE POINTS are the supports of the rocker shafts . . . at every one of them a Fafnir Wide Inner Ring Ball Bearing was slid easily onto the shaft, without machining or shouldering, and locked with a finger-twist of its collar.

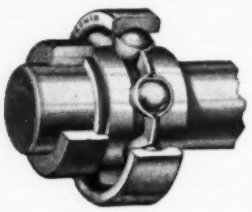
20,000 OTHER VITAL points are the supports of the angular shafts which drive the bakelite reels



conveying the rayon yarn. Again, Fafnir Wide Inner Ring Ball Bearings were selected for their ease of installation; protected from dirt by double shields, and grease-packed for long operation, they reduce maintenance to a minimum.

OVER 1000 OTHER FAFNIR Wide Inner Ring Ball Bearings were installed at intermediate points of the cylinder shaft on the cap twister. Failure at one of these points would stop operation of all spindles. Fafnir reliability is paramount. The Fafnir Bearing Company, New Britain, Conn. . . Atlanta, Birmingham, Boston, Charlotte, Dallas, Houston.

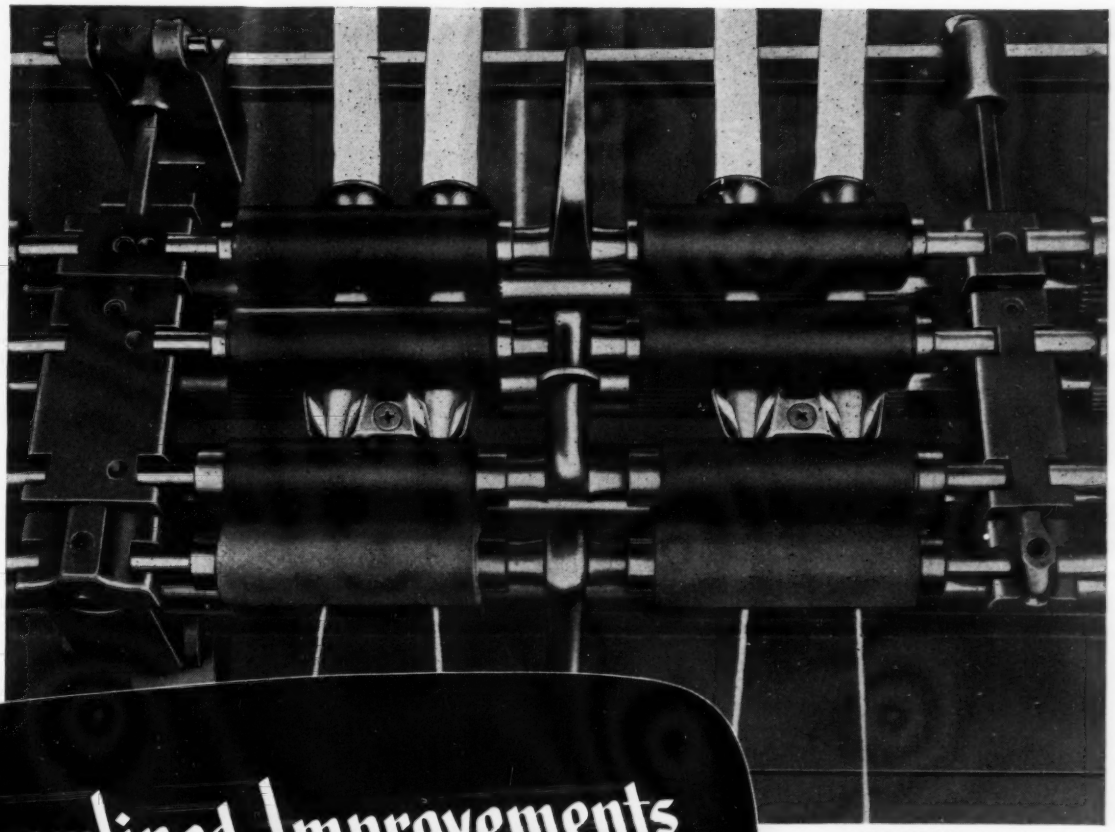
Fafnir Wide Inner Ring with Self-Locking Collar



Easiest of all ball bearings to install or remove

FAFNIR *Ball Bearings*

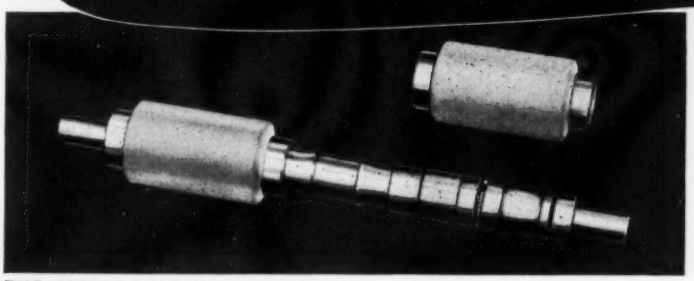
THE BALANCED LINE • MOST COMPLETE IN AMERICA



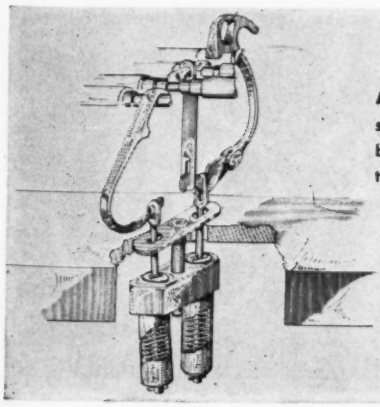
Streamlined Improvements the new Model J-3

CONTROLLED DRAFT ROVING ASSEMBLY

TOP VIEW of the Model J-3 Controlled Draft Roving Assembly. Note how the Forming Trumpet gathers the wide ribbon of fibres, and transforms it into a uniform compact tubular shape just before it reaches the final drafting zone.



THE NEEDLE BEARING TOP ROLL is a distinctive feature of the Model J-3. The bearings are enclosed in dust and lint proof casings, and are lubricated at long intervals with a rust-inhibiting grease. With this top roll, there is a smooth, uniform motion and effective fibre control even with heavy grists of cotton.



THE SPRING PRESSURE ASSEMBLY, showing the pressure springs in their casing, the beams, levers and stirrups of the pressure distributing system.

THIS NEW SACO-LOWELL Controlled Draft Roving Assembly was designed to accomplish three important objectives:

1 **IMPROVING** the fibre control function of the Forming Trumpet.

2 **DEVISING** a source of roll pressure which would be efficiently uniform in action, entirely trouble-proof in maintenance, and quickly adaptable to changes in operating conditions.

3 **ARRANGING** the entire drafting assembly in order to reduce the necessity of frequent cleaning and to facilitate this work when it becomes necessary.

THE RESULT:—Even-Roving, economically produced through efficient fibre control—spic-an'-span cleanliness and thorough lubrication.

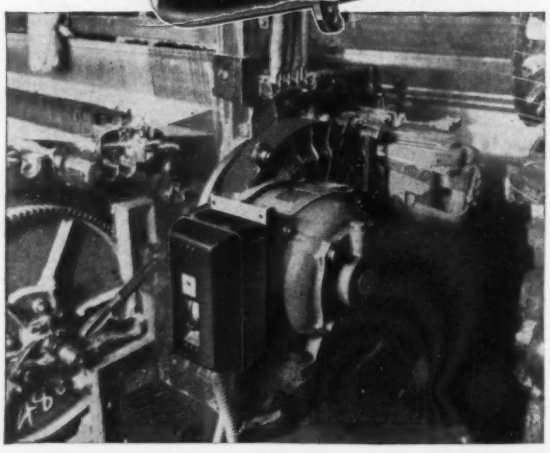
BETTER ROVING AT A SAVING should interest every mill. Our engineers will show you how easily this can be accomplished with the Model J-3 frame.

SACO-LOWELL SHOPS

60 Batterymarch Street, Boston, Mass.

Charlotte, N. C. Atlanta, Ga. Greenville, S. C.

IT'S EASY TO SEE WHETHER THIS STARTER IS on-off OR tripped



New "De-ion" Switch for Motors up to 7½ hp

This new loom switch, the Westinghouse Motor Watchman, has an indicating handle on the front of the starter. It shows the operator or inspector at a glance whether the starter is tripped, on, or off. Smaller, more compact, it is easily mounted on or near the machine. Saves time . . . saves guessing . . . saves space.

You get all these advantages only in the new Motor Watchman

- Westinghouse "De-ion" Arc Quenchers protect contacts from flashovers . . . prolong contact life.
- Snap action bi-metal disc relay protects motor from overload. Resets to correct calibration — nothing to replace.
- Safety interlock prevents accidental contact with live parts.

For complete data, ask your nearest Westinghouse office, electrical wholesaler or industrial agent.

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.
East Pittsburgh, Pa.

J-20847-A

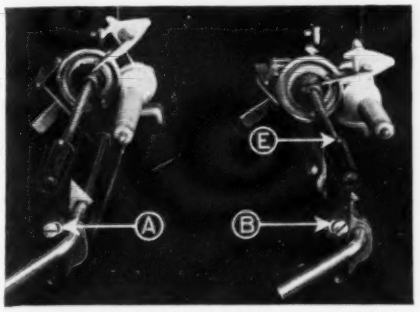
Westinghouse Loom Switch

WESTINGHOUSE ELECTRIC

THIS IS NO. 16 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation



The Traverse Bar Support Brackets should be uniformly adjusted to produce parallel-sided bobbins, before setting the Cop Formers. "A" shows Bracket moved to the right, producing tapered bobbins smaller in diameter toward the nose end. "B" shows Bracket moved to the left, producing tapered bobbins smaller in diameter toward the base end.

SETTING THE COP FORMER
(No. 90 Winder)

Proper setting of the Cop Former is necessary for good winding of automatic loom bobbins. The Cop Former acts as a guide to form the taper at the base of the bobbin. The length of taper at the base of the full bobbin should be the same as the length of taper at the nose.

The first step in setting the Cop Former is to push the Traverse Bar into the frame as far as it will go. With the Screw at "C" loosened, the Traverse Wheel is moved back to the starting position for winding. The Cop Former can now be pressed against the Follower (D) which is part of the Thread Guide Holder Frame. This will cause the Traverse Bar, which is pivoted at "E", to move toward the empty bobbin. However, the Traverse Wheel should not actually touch the bobbin because room must be allowed for the thickness of the bunch.

At this point the Screw "C" is tightened and a mark made on the Cop Former where the Follower touches at "F." The length of the stroke is measured off and another mark made at "G." This length of stroke is determined by the hole used in the Traverse Bar Lever, which is longer than the length of traverse of yarn on the bobbin. Therefore, the table below should be used to determine the location of "G" on the Cop Former.

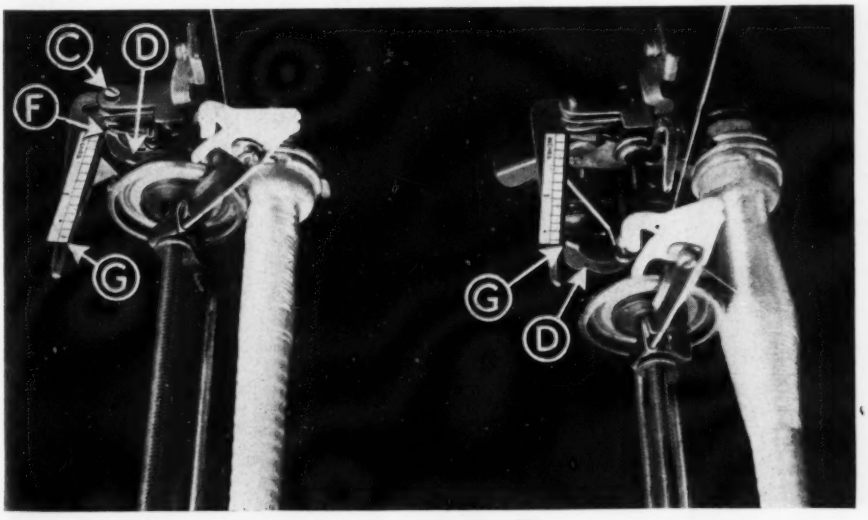
HOLE	DECIMAL	FRACTIONAL
Top	2.00 inches	2 inches
2	1.84	$1\frac{27}{32}$
3*	1.67	$1\frac{43}{64}$
4	1.52	$1\frac{33}{64}$
5	1.35	$1\frac{11}{32}$
6	1.18	$1\frac{3}{16}$
Bottom	1.00	1 inch

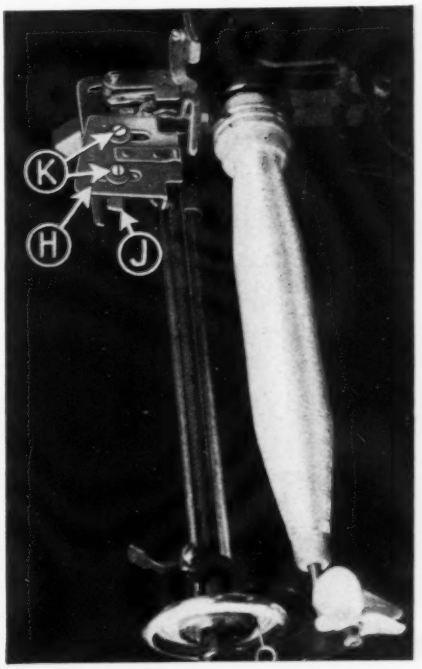
*This hole in the Traverse Bar Lever is used for most automatic loom bobbins.

After the marks have been made, the Traverse Wheel is brought out beyond the end of the Cop Former and then returned in order to discover where the Follower first touches the Cop Former. While doing this, the Traverse Bar must be held to prevent it from moving toward the spindle.

If the Follower does not touch the Cop Former exactly at the outer mark, it will be necessary to experiment further with the setting. If the Follower touches before it reaches the mark, the tip end of the Cop Former is too *near* the spindle; if the Follower passes the mark, the tip end of the Cop Former is too *far* from the spindle. All adjustments of the Cop Former *must* be made with the Traverse wheel pushed back so Follower touches at "F."

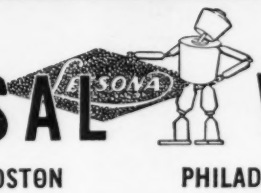
To check this setting before adjusting other spindles, wind a full bobbin for inspection. Other spindles can be set by using the Cop Former Gauge shown in the illustration.





The Cop Former Gauge "H" is snapped over the Traverse Bar and pushed back as far as possible. The Guide Bar "J" is set up against the Cop Former and locked by the two screws "K." The Gauge can now be used to set other Cop Formers by lining them up to the Guide Bar.

"THERE IS A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"



UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

GARGOYLE VACTRA OILS St

THEIR PERSISTENT FILM ALLOWS

Gargoyle Vactra Oils' exceptional persistence-of-film can help your mill make these substantial savings:

- **Less cloth spoilage due to "oil throw"—you save on seconds!**
- **Protection from costly wear ...you pay less for maintenance.**
- **Decreased frictional "drag" on bearings—you use less power!**

THE SOCONY-VACUUM man offers you a complete line of lubricants, plus these *exclusives:*

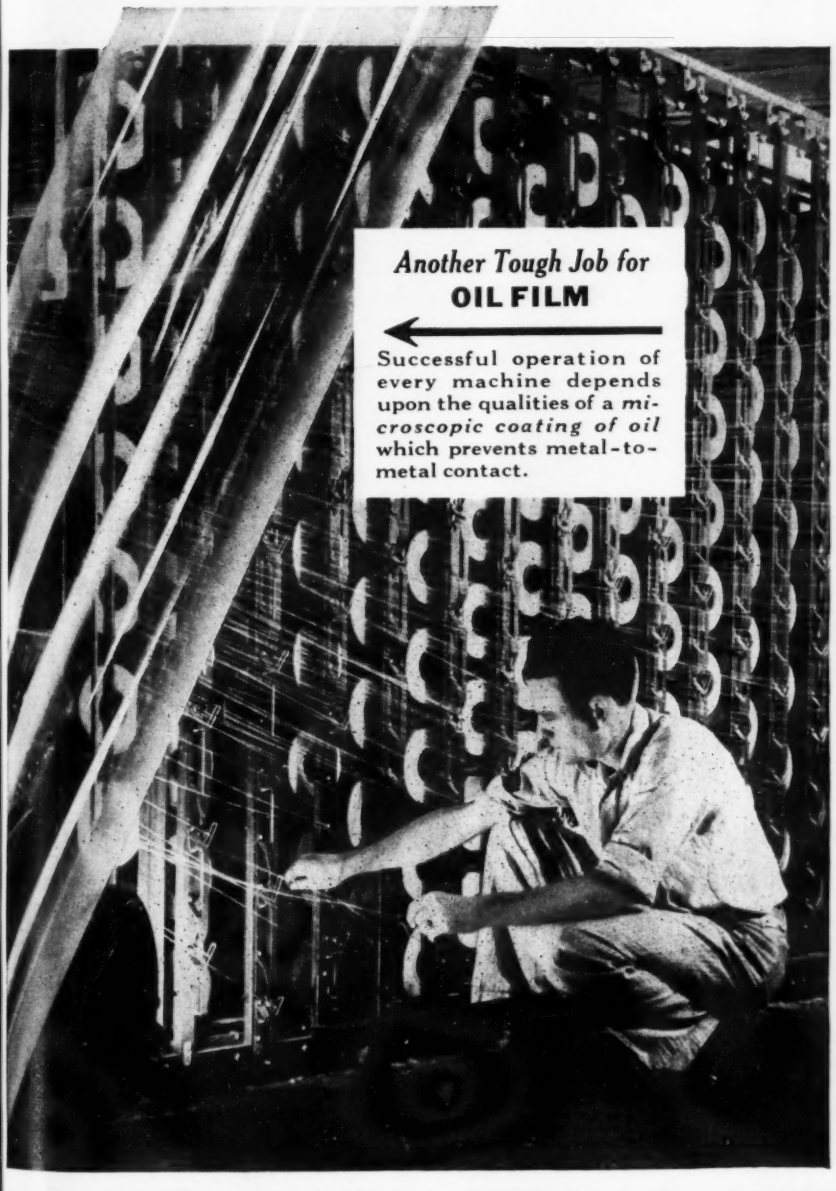
The right lubricant for every machine . . . and new lubricants ahead of new needs . . . developed by world-famous research laboratories through close cooperation with machine builders.

73 years' experience—thousands of case histories—to guide in prescribing the right use of these lubricants to gain Lubrication Profits for you.

World-wide distribution and guaranteed uniformity—the same quality available everywhere.

ay Put!

MINIMUM FEEDS...LESS SPOTTING


Another Tough Job for
OIL FILM
Successful operation of every machine depends upon the qualities of a *microscopic coating of oil* which prevents metal-to-metal contact.

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Industrial Service and Lubricants Help to Lower Costs by

Correct Lubrication

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SOCONY-VACUUM OIL CO., INC.

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General Petroleum Corporation of California

AHCOVEL-A

A BETTER SYNTHETIC SOFTENER OF THE SUBSTANTIVE TYPE

GIVES A VELVETY FINISH TO COTTON FLANNELS

1. Provides velvety, soft finish. **2.** Resistant to repeated washing and dry cleaning. **3.** Non-greasy, odorless finish, which will not discolor with heat or age. **4.** Easy to apply; economical to use. **5.** Also suitable for other cottons, rayons, wool and silk.

★

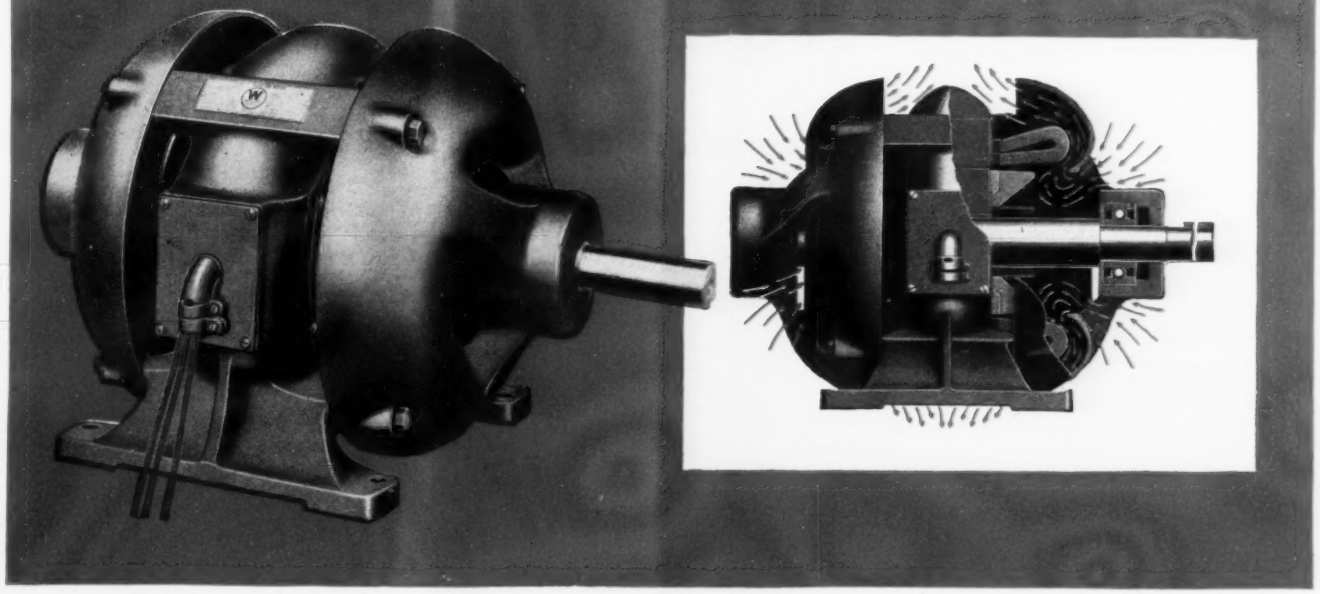
WRITE FOR DESCRIPTIVE CIRCULARS AND SAMPLES.

ARNOLD-HOFFMAN & COMPANY, INC.

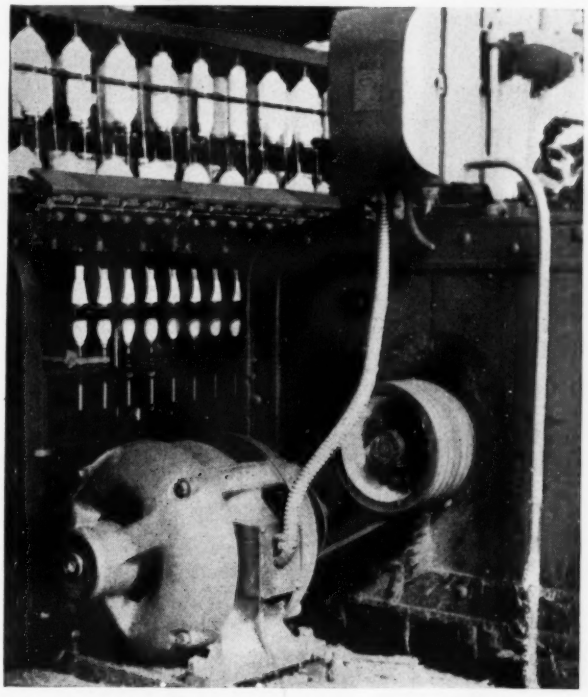
Established 1815 **PROVIDENCE, RHODE ISLAND** Plant at Dighton, Mass.

NEW YORK • BOSTON • PHILADELPHIA • CHARLOTTE • COLUMBUS • GREENVILLE

DESIGNED AND BUILT FOR THE TEXTILE INDUSTRY



A NEW *Lint-Free* WESTINGHOUSE MOTOR



Here's a motor lint won't smother! It's lint-free — a motor designed and built exclusively for individually driven textile machines — a motor that will *keep* machines running and requires an absolute minimum of care because —

IT GIVES THESE ADVANTAGES:

- Unobstructed Air Path
- Smooth Polished Windings
- Permanently Sealed Bearings
- Streamlined Air Passages

Plus

Sturdy Westinghouse Construction
Proved Westinghouse Performance.

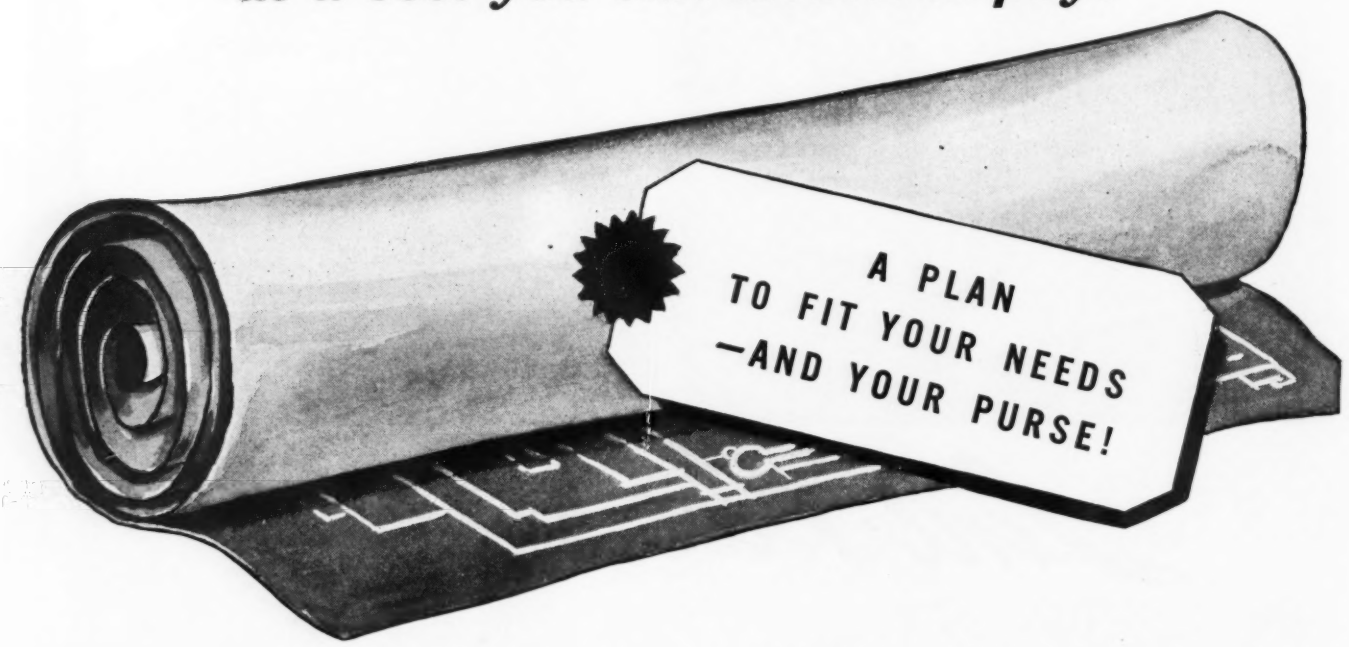
WESTINGHOUSE ELECTRIC & MANUFACTURING CO.
EAST PITTSBURGH, PA.

J-20859

W WESTINGHOUSE ELECTRIC **Westinghouse Lint-Free Motors**

How to Lick Heat and Humidity Troubles

at a cost you can afford to pay!



TODAY'S HIGH SPEEDS have created a real problem for textile mills everywhere. *Too much heat—not enough humidity!* This just about sums it up.

Yet, many plants have done nothing about it. They continue to suffer from the keen competition of adequately air conditioned mills. They are paying big for costly motor burn-outs, high spoilage, inferior quality—not to mention slowed-down employees. And—all because they think that the remedy will cost too much.

The Sturtevant plan of "Cooling and Humidification to Fit Your Pocketbook" is especially designed to meet this situation. It is a plan which enables practically any mill to obtain definite cooling and humidifying relief—without delay—at a cost which the mill can afford to pay.

There are four separate and distinct Sturtevant plans, each of which has been developed for a different set of general conditions commonly encountered in the textile field. Each can be adapted to precisely meet individual mill needs. See the brief descriptions to the right.

If you are up against a heat and humidity problem, our nearest representative would welcome an opportunity to discuss it with you. You would find him to be thoroughly experienced, familiar with mill problems and requirements, and genuinely desirous of helping you work out your problem.

You can depend on Sturtevant recommendations and the Sturtevant equipment—over 75 years of air engineering experience are behind them.

COOLING & AIR CONDITIONING DIV.
B. F. STURTEVANT COMPANY
HYDE PARK, BOSTON, MASS.
Atlanta Camden Chicago Greensboro
Los Angeles New York

Sturtevant
REG. U.S. PAT. OFF.
Puts Air to Work

PLAN 1.

Vap-Air Units—An extremely low cost standardized unit for room cooling in conjunction with an existing humidifying system, supplying automatically controlled outside air. Easily installed by mill mechanics, it maintains even relative humidity at all times, prevents over-humidification, insures uniform distribution of air. All under automatic control.

PLAN 2.

Vap-Air Blender Units Plus Your Head System—A carefully engineered low cost system which provides a *guaranteed* summer temperature reduction. Installation under the supervision of Sturtevant experts includes revision of present humidifying system so as to provide desired degree of temperature reduction most efficiently. All under automatic control.

PLAN 3.

Sturtevant Textile Evaporative Cooler and Humidifier System—A "tailor-made" system, completely installed, of either several unit systems, or one large system. Provides lowest possible temperature obtainable without use of refrigeration. All under automatic control.

PLAN 4.

Sturtevant Textile Evaporative Cooler and Humidifier System Combined with Supplementary Head Systems—Essentially the same as Plan 3 but adapted for rooms requiring relative humidity above 65%. All under automatic control.

Cooling & Humidification to Fit Your Pocketbook

20,000,000 LBS. IN ORDERS

THAT Is How Knitters, Weavers and Braiders Expressed Their Approval of Franklin Process Yarns and Yarn Dyeing Service in 1938

LOCAL service, good deliveries, good matches, uniformly high quality, winding economy and completeness of service (we supply the yarn, dye it, convert it, and consult on color problems when desired),—these are some of the reasons for Franklin Process popularity.

They are made possible by expert technical personnel; the largest yarn dyeing capacity in the world; adequate, modern yarn converting equipment; and the suitability of the Franklin Package as a winding supply.

There is probably a Franklin Process plant or office within phoning distance from you. Ask our representative to call.

A FEW OF THE MANY FABRICS FOR WHICH WE PACKAGE DYE YARNS (Cotton or Spun Rayon)

In addition to the products illustrated, Franklin Process Dyeing is used in every type of yarn dyed fabric including Chenille bedspreads and rugs, terry fabrics, narrow fabrics, dress goods, shirting, underwear, pajama and handkerchief fabrics, elastic fabrics, braids, and curtain, drapery and upholstery fabrics.

FRANKLIN PROCESS COMPANY

Natural Yarns, Colored Yarns, Glazed Yarns, Dyeing and Processing Machines

Providence, Philadelphia, Greenville, Chattanooga . New York Representative, 40 Worth Street. • Chicago Representative, 100 W. Monroe Street

Franklin Process

★ SPECIALISTS IN PACKAGE DYEING SINCE 1910

LIKE WEARING LONG FLANNELS IN THE SUMMER!

Read how Shell Lubricants made these cotton-loom bearings run cooler

DOWN in South Carolina, a large cotton-manufacturing plant having 4000 looms making sheetings, drills, twills and specialties was having trouble.

The trouble lay in the lubricant used. The oil was picking up the cotton fly—causing a gummy residue that actually *insulated* the bearings and *kept in* the heat.

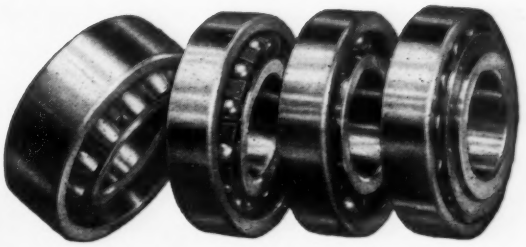
When the Shell man arrived on the scene, he carefully cleaned the bearings with a light solvent—then put in the proper grade of Shell Textilis Oil.

The results were immediate! Cotton fly build-up was reduced to a minimum. There was no gummy residue in the bearings, and they ran cooler under a lower friction load. In addition, no staining occurred.

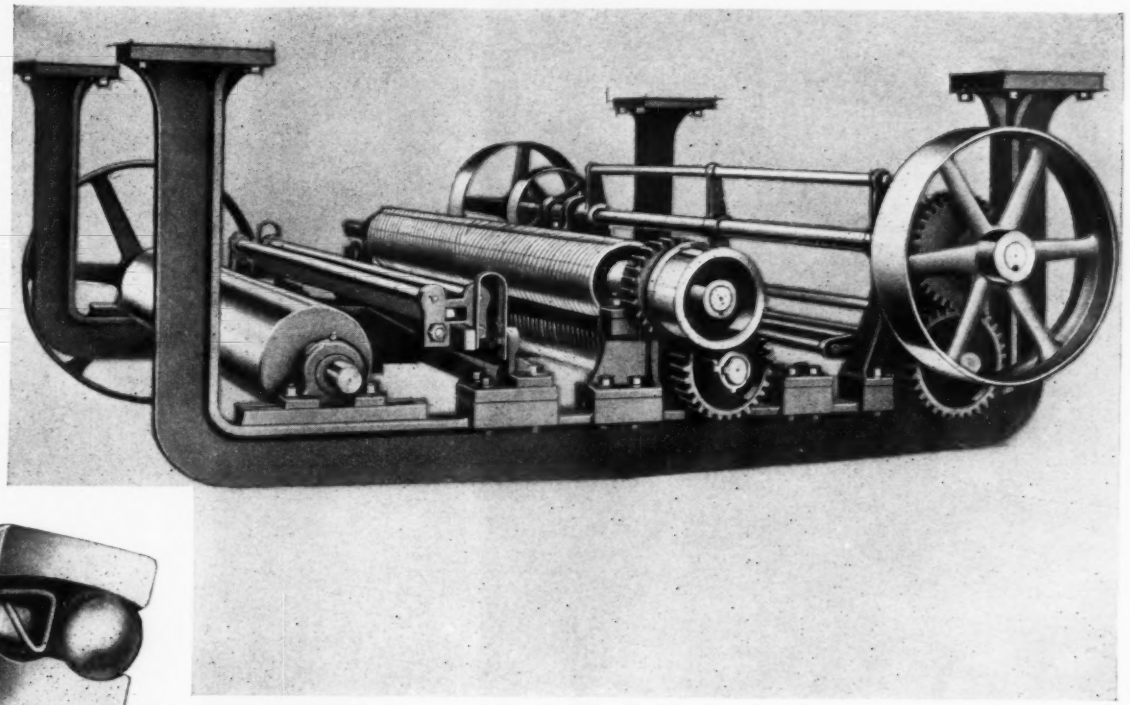
These looms were formerly oiled once in 12 hours of operation, and at the end of the run the bearings were completely dry They now run 24 hours and a dry bearing is a rarity

With a trained staff of engineers, Shell can help you solve *your* lubrication problems. A Shell representative is as near as your telephone. Why not call today?

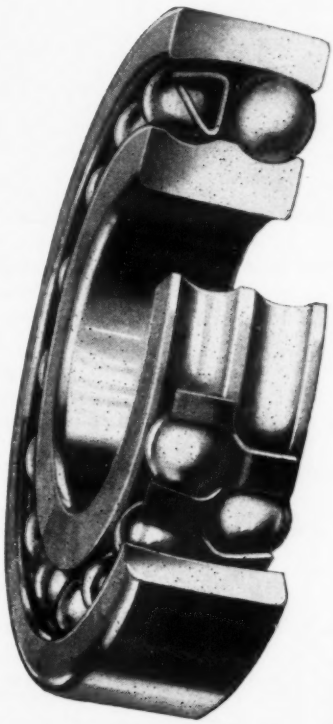
SHELL
TEXTILE LUBRICANTS



SCUTCHERS OPEN FABRICS EASILY WHEN THEY OPERATE ON SKF BALL BEARINGS



● *Built by The Textile-Finishing Machinery Co.*



SKF BEARINGS TAKE THE GUESS-WORK OUT OF BEARING SELECTION ON MACHINES OF ALL TYPES

● OPENING cotton, woolen and worsted fabrics from the rope to full width entails too many risks to gamble with bearings. Bearing trouble means shutdowns, lost time and rising costs.

That's why SKF Ball Bearings are on the draw roll, governor, scroll rolls and beaters of this New Type Standard Ball Bearing Scutcher. They're always running smoothly at low maintenance records that never break down.

SKF Bearings are made of high-grade steel hardened throughout to resist wear. Self-aligning, they turn freely with the shaft. Self-contained, they need no adjustments. And they *keep* their initial close tolerances when equipment is pushed to the limit. What more can you expect of a bearing on any machine . . . anywhere?

4375

SKF
Ball and Roller Bearings

SKF INDUSTRIES, INC., FRONT ST. & ERIE AVE., PHILA., PA.

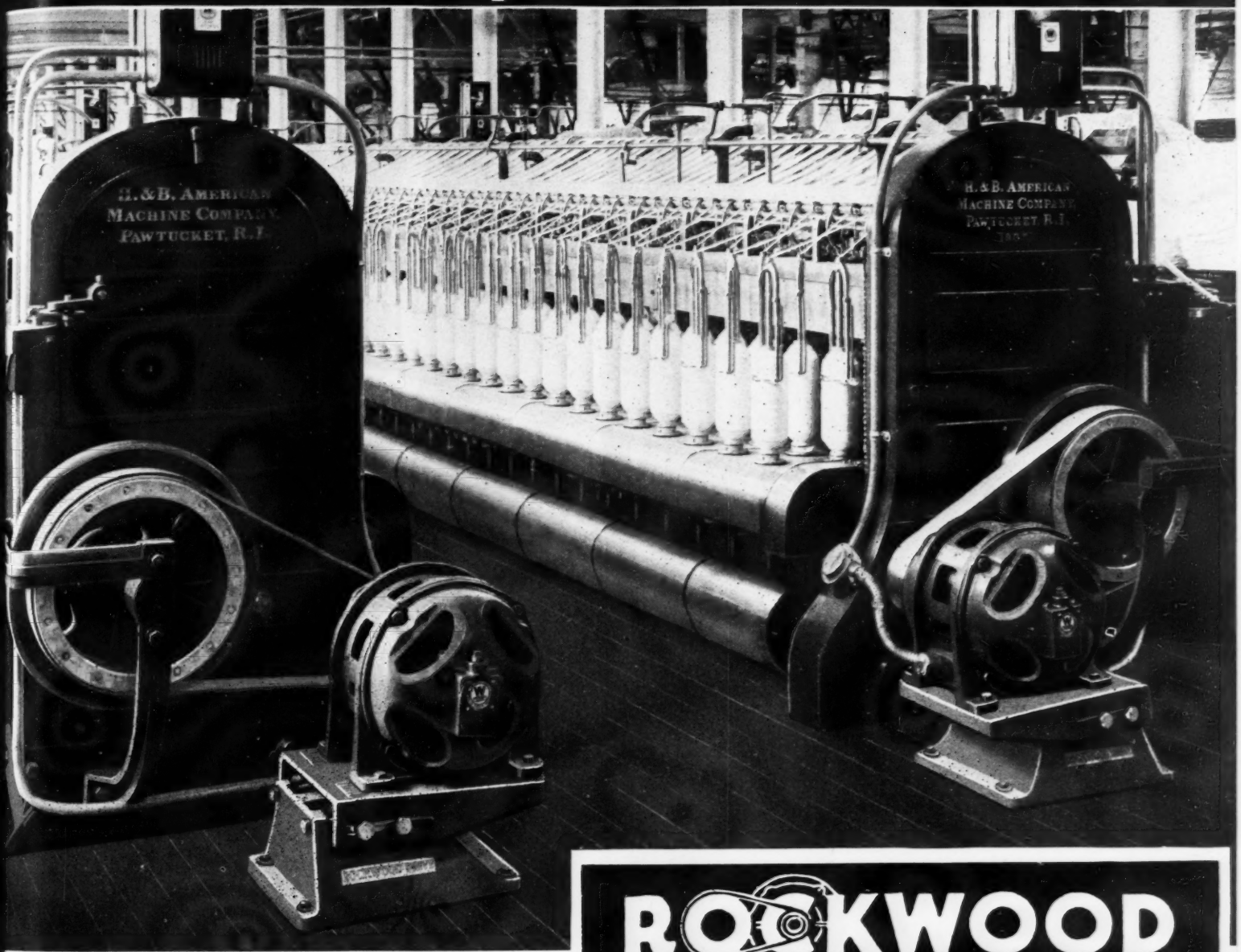
IT'S *NEW*

THE H & B QUAD-ROLL SCROLL CONDENSER HIGH-DRAFT ROVING SYSTEM FOR INTERMEDIATE DRAFTS UP TO 16 ON STAPLES UP TO 1¼"

This new High-Draft Roving System provides a simple, economical, and highly efficient mechanism for mills making medium count yarns and can be readily applied to ANY make of frame. Some of its more important features are as follows: **1.** 1 or 2 back lifting rolls as desired. **2.** Sliver combing trumpet. Flattens sliver for drafting and has slight combing action (see illustration). **3.** Self adjusting saddle for 3 back lines of rolls, which effects accurate distribution of weight (see illustration). **4.** Front roll deadweighted (see illustration). **5.** Redesigned and shortened scroll condenser which conserves space (see illustration). **6.** Fixed roller stand assembly for second and third rolls in combination with scroll condenser, giving the same setting features as provided on the conventional three roll frame (see illustration). **7.** Universal gearing as in H & B 5-Roll High-Draft Roving System. . . . . If you wish to improve the efficiency of your card room with a MINIMUM investment let us tell you more about this new High-Draft Roving System.

H & B AMERICAN MACHINE COMPANY
Textile Mill Machinery
PLANT AT PAWTUCKET, RHODE ISLAND
Boston Office: **161 Devonshire Street**
Atlanta Office: **815 Citizens and Southern National Bank Bldg.**
Charlotte Office: **1201-3 Johnston Bldg.**

ANOTHER LARGE MILL CHOOSES ROCKWOOD pivot-motor DRIVES



ROCKWOOD
PIVOTED MOTOR DRIVE

CALL IN A ROCKWOOD ENGINEER. Join the imposing list of great cotton mills who have found that Rockwood Drives improve the performance of spinning frames, twister frames, cards, looms, sliver lappers, lineshafts, compressors, and other machines. More production AND a better quality can be depended on from these fine drives, together with a reduction in operating costs.

More machine output and a better quality

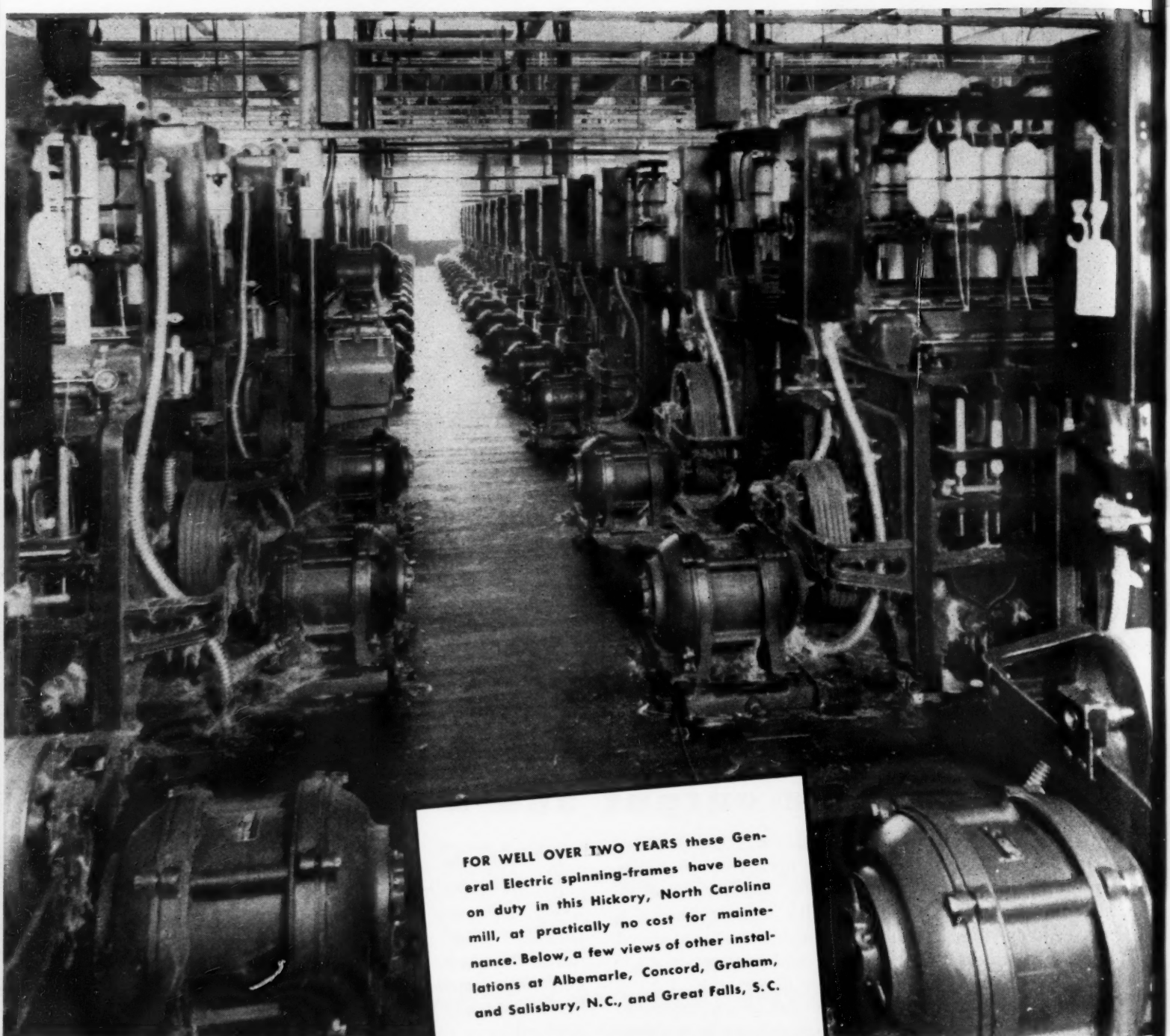
Another great Southern cotton mill has about 130 of these Rockwood pivoted-motor drives on slubbers, spinning frames and a compressor. With a higher efficiency than any other belt drive these remarkable drives keep spinning and twisting frames up to speed, maintain maximum production and produce work of a better quality than with other drives.

Production is greater, more continuous and more dependable. There is less drive maintenance, a sizable saving in power, and a large saving in replacement belts. The belt tension is matched to the load automatically, changing as the load changes, increasing when the load increases, falling off as the load lessens. Both gravity weight of the motor—and motor "kick back", or re-action torque—are used, and the improvement in drive and in driven machine performance is so notable that here, indeed, is a new perfection in short center belt drives.

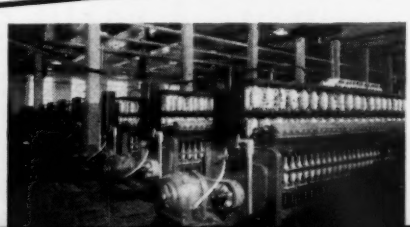
Rockwood Manufacturing Company, Indianapolis, Indiana

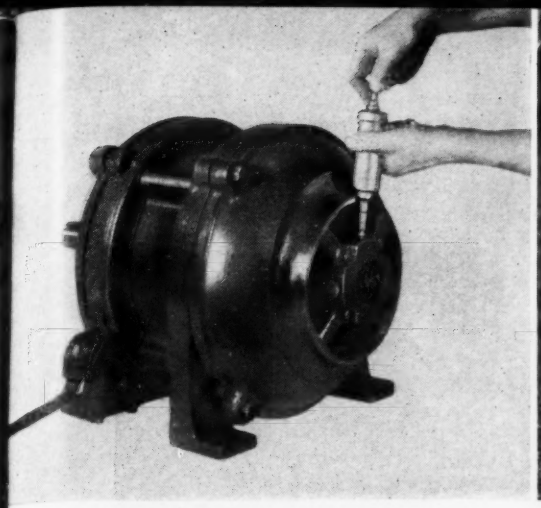
Rockwood Drives are reducing maintenance, saving power and improving performance wherever used

"Operating for 2 Years and They're Cleaning Fine!"

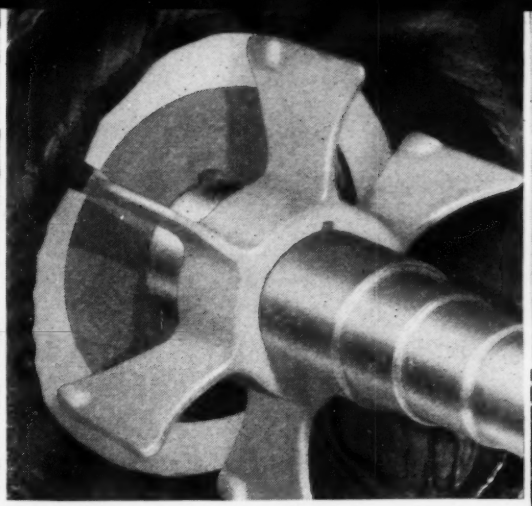


FOR WELL OVER TWO YEARS these General Electric spinning-frames have been on duty in this Hickory, North Carolina mill, at practically no cost for maintenance. Below, a few views of other installations at Albemarle, Concord, Graham, and Salisbury, N.C., and Great Falls, S.C.

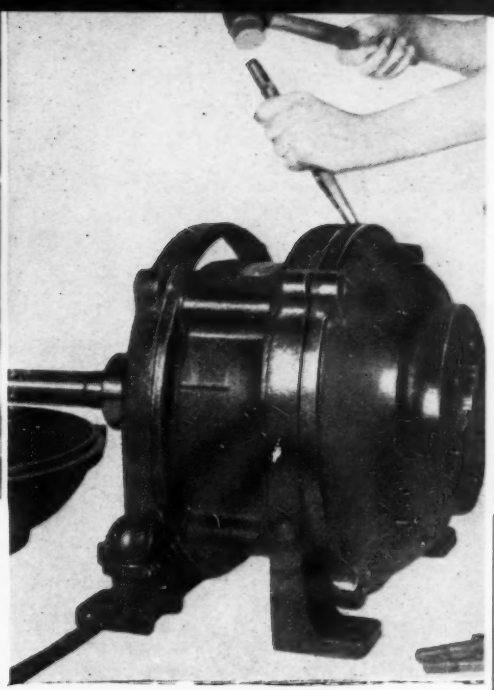




EASY TO GREASE—the long-lived bearings of this type of motor require little greasing; and that takes but a few seconds' time. The pressure-relief system guards against overgreasing



SHAPED TO SHED AND EXPEL LINT are the strong cast fans of distinctive aerodynamic design



EASY, PRACTICAL ASSEMBLY—because this motor is constructed on regular motor lines, it is easy to take down and to assemble. Four bolts on each end secure the end shields; and with these removed, the rotor can easily be removed from, or replaced in, the stator. End shields are interchangeable, end-for-end

That's what the mills say about the G-E spinning-frame motor

(SCREENLESS OPEN)

"THEY'RE cleaning fine!" is the consensus of mills using the G-E screenless open (spinning frame) motor. The test of time has shown that these motors remain clean of lint for long periods, and at the same time deliver efficient, economical service as motor drives.

Two years ago, following conclusive tests under the severest mill conditions that could be found, this motor was announced at the Southern Textile Exposition.

Today, after this motor has had more than two years' service in many mills, these mills are just as proud of its performance as are we, its manufacturers.

There is no trick construction, but there is a specially designed air-ventilating system. The air passages are large and smooth. There are no baffles. The fans, located at both ends of the rotor, are shaped and positioned to expel lint and dust by positive action.

The design of the motor incorporates, too, the features of mechanical strength and rigidity that G-E motors have demonstrated consistently in textile-mill service. Insulation, windings, accuracy of alignment, all fulfill the most modern standards of motor manufacturing—standards that meet the requirements of textile mills. For further information on this motor, ask the General Electric representative in your territory, or write General Electric, Schenectady, N. Y.

NEW

General Electric announced at this year's Southern Textile Exposition an improved loom motor and an entirely new loom switch. The switching element in this switch cannot be slammed "OFF" by the vibration of loom operation. Positive contact is maintained despite loom vibration. It is available for motor-mounting as well as for pedestal mounting. It is roomy for wiring and inspection. Ask the G-E representative near you for further information

GENERAL ELECTRIC

011-459

DESIGN for BURNING

A Pattern of POWER and PROFIT

Admiralty Coal · DEPENDABLE ANTHRACITE · DENDRON · CRITERION COAL · RODA · STONEGA · Old Kentucky · CROZER · PREMIX STOKER · GENCO

While it is no doubt recognized generally, that all coal is not alike . . . only those who have adopted the specific coal of the right analysis for a given purpose, can be completely aware of the operating economies offered by the right coal.

The brands of coal available through General Coal each offer individual characteristics. A study of your power needs and facilities will disclose the one that is best and most economically suited to your plant. The service conveniences offered by General Coal's strategically located offices assure an additional advantage that means increased profits to you.

GENERAL COAL COMPANY

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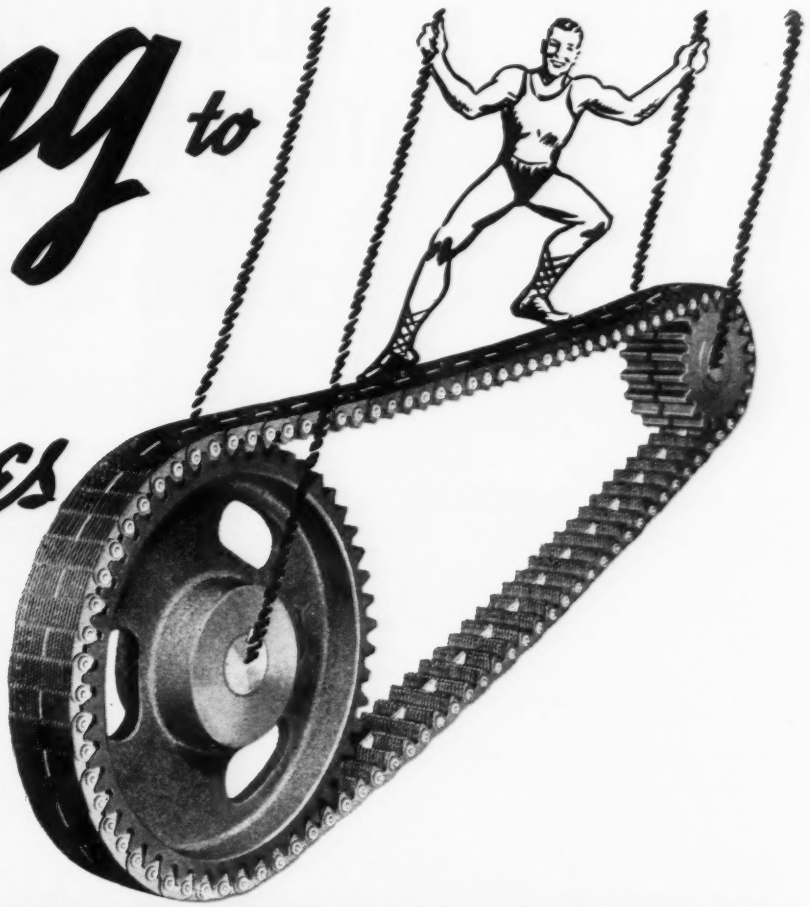
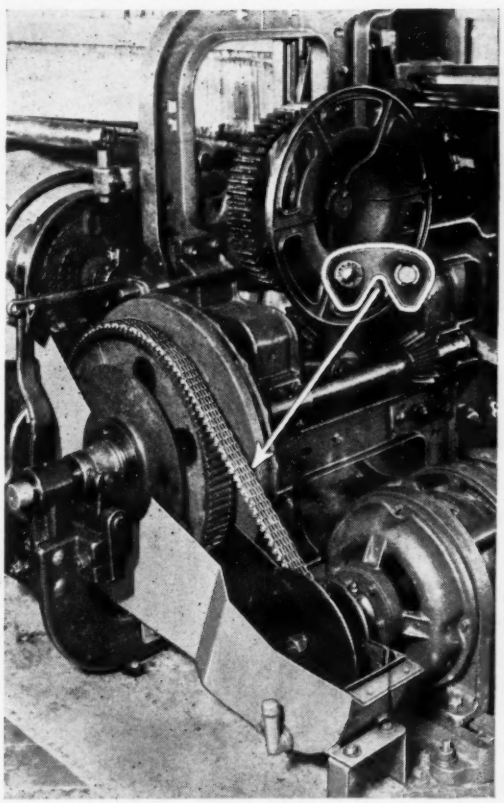
GENERAL COAL

The Swing to SILENT Chain Drives IS ON!





● No more worry about slipping, inefficient belts—no more frequent drive replacements with machines down and costs up. Instead, every machine operating at its full rated capacity—every R.P.M. of each motor being delivered to its machine. That's what Silverstreak silent chain drives can mean to you.
Send for Data Book 125.

LINK-BELT
Silverstreak
SILENT CHAIN DRIVES

are
Long-Lived
Require Practically
no attention
or upkeep expense
and cannot slip!
They have stood
the test of time

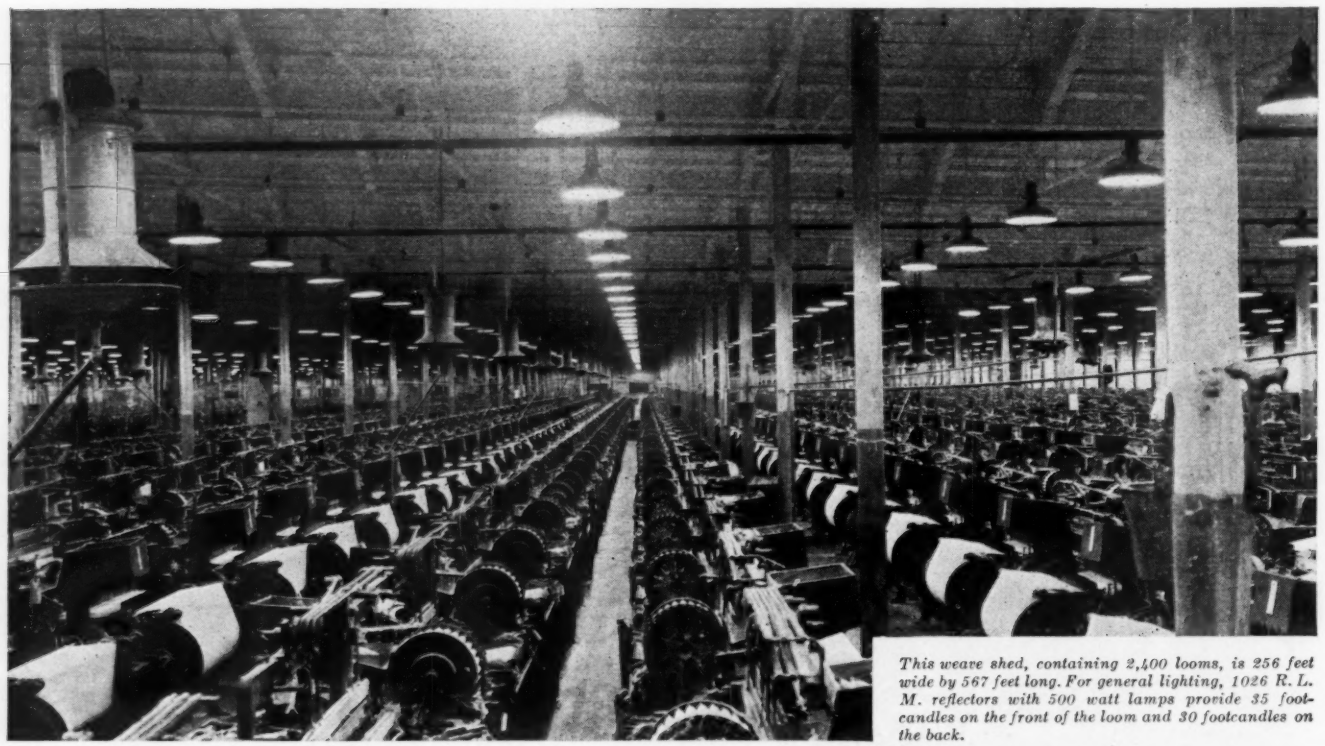
They are Flexible as a Belt—Positive as a Gear—
More Efficient than Either

LINK-BELT COMPANY 7755-B

Indianapolis, Chicago, Philadelphia, Atlanta, San Francisco, Toronto, New York, Boston, Baltimore, New Orleans, Dallas, or any of our other offices, located in principal cities.

LIGHT-CONDITIONING HELPS PRODUCE BETTER CLOTH WITH FEWER REJECTS

West Point Mfg. Co. at West Point, Ga. also finds that better light improves working conditions



This weave shed, containing 2,400 looms, is 256 feet wide by 567 feet long. For general lighting, 1026 R. L. M. reflectors with 500 watt lamps provide 35 footcandles on the front of the loom and 30 footcandles on the back.

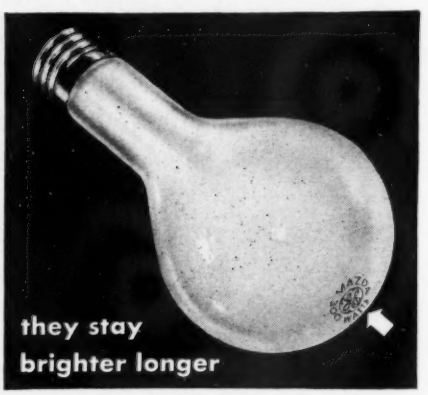
LIGHT-CONDITIONING justifies itself on the basis of improved working conditions and eyesight conservation alone, according to the management of the West Point Manufacturing Company of West Point, Ga. In addition, this company finds that better lighting also helps produce better cloth with fewer rejects and seconds.

The West Point Manufacturing Company started a long range light-conditioning program after a satisfactory test installation had been made in a portion of one weave room. Eventually the company's five mills will be completely light-conditioned. In the meantime, in order to spread the cost evenly, 50 to 100 new lighting units are being installed a month. Like many other leading textile mills, the West Point Manufacturing Company uses G-E MAZDA lamps for its light-conditioning. These lamps are brighter than ever before and give more light at no added cost for electricity.

For details on light conditioning, write to General Electric Company, Dept. 166-C-H, Nela Park, Cleveland, Ohio.

Lighting check-up may reveal profit leaks!

Most electric service companies will gladly measure the lighting in customers' plants free of charge. Check-ups of this kind often reveal that modern, sight-saving lighting more than pays its own cost by stopping profit leaks and by increasing efficiency. Phone your local electric service company today!

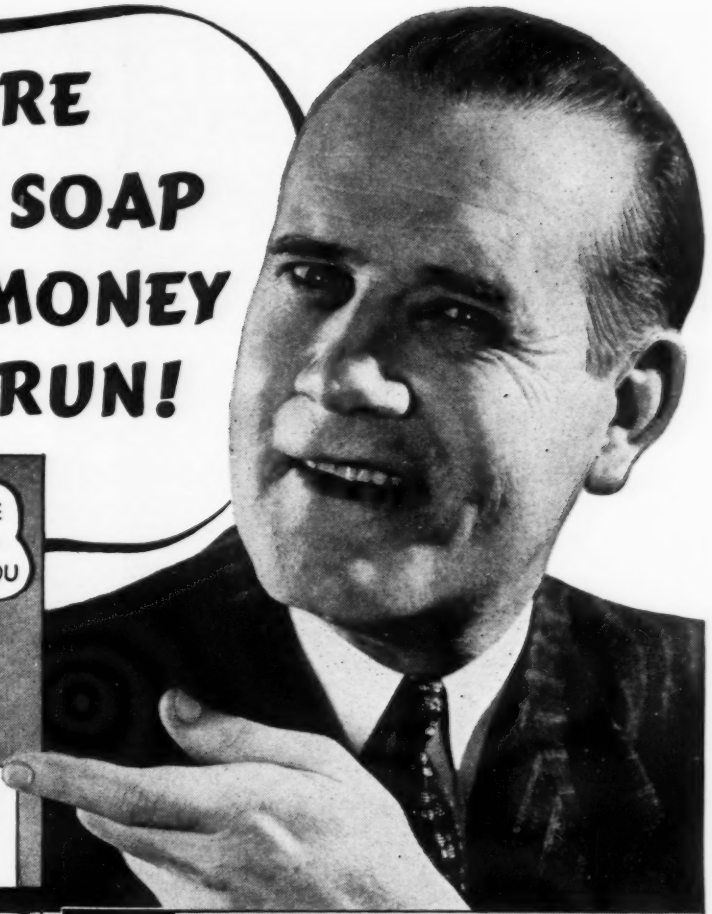


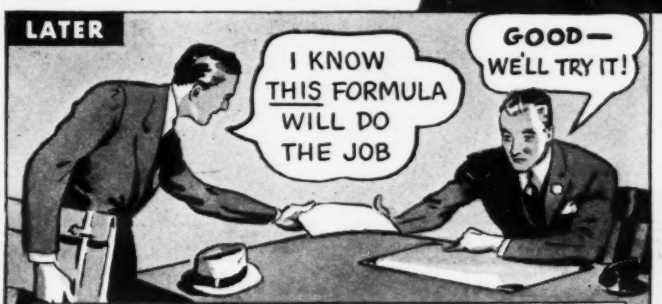
G-E MAZDA LAMPS

GENERAL ELECTRIC

HOW A MORE *Expensive* SOAP SAVED ME BIG MONEY IN THE LONG RUN!

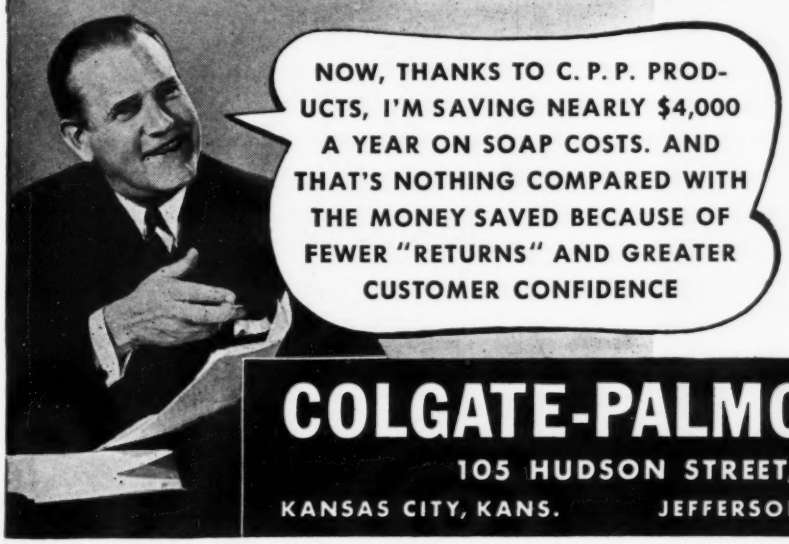
I was beginning to dread the morning mail . . . Every day brought me new complaints about the quality of our finished goods. Finally, I called in the Colgate-Palmolive-Peet man and asked him if he could help us...





A short time later he was back with a procedure his technicians suggested, using a C.P.P. Soap. He said it would cost me a little more to buy, but I'd save money in the long run—so we gave it a trial...

Frankly, I was astounded at the results we got. The quality of our finished work was greatly improved... We actually used 10% less soap . . . Our production was up 12% . . . and—"returns" were practically eliminated.


NOW, THANKS TO C. P. P. PRODUCTS, I'M SAVING NEARLY $4,000 A YEAR ON SOAP COSTS. AND THAT'S NOTHING COMPARED WITH THE MONEY SAVED BECAUSE OF FEWER "RETURNS" AND GREATER CUSTOMER CONFIDENCE

IN the complete line of C.P.P. Products you will find detergents and wetting agents to *exactly fit your needs.* Because of the volume in which they are produced, C.P.P. processing agents usually *cost less to use* than so-called "special" products. And standardizing on the C.P.P. line will help you produce better finished work and, at the same time, save money.

To help you select the best processing agents, we invite you to make use of our Free Consulting Service. For full information, ask your C.P.P. representative, or write to us direct.

COLGATE-PALMOLIVE-PEET CO.

105 HUDSON STREET, JERSEY CITY, N. J.

KANSAS CITY, KANS. JEFFERSONVILLE, IND. BERKELEY, CALIF.

THE COMPLETE LUNKENHEIMER LINE

Immediately Available

From Distributors Conveniently Located to Serve You

VALVES

Bronze, Iron, Steel and Corrosion-Resistant Alloy; Globe, Angle, Cross, Check, Gate, Throttle, Non-return, Blow-off, Pop Safety, Relief, Whistle, etc.

OIL AND GREASE CUPS

Glass, Bronze or Aluminum Body Oil Cups; Bottle Oilers; Constant Level Oil Controls; "Glaswick" Oil Cups; Automatic or Screw Feed Bronze Grease Cups.

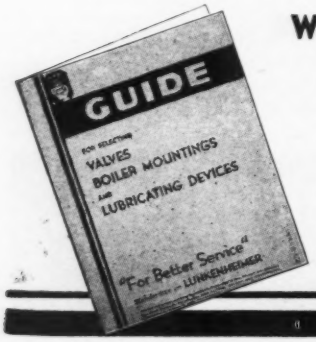
BOILER MOUNTINGS

Non - return, Pop Safety and Blow - off Valves; Water Columns, Water Gauges and Gauge Cocks; Fusible Plugs.

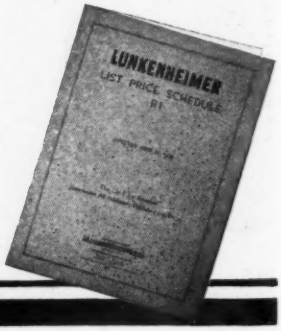
LUBRICATORS

For Steam, Gas, Gasoline, Oil Compressor and Pump Cylinders; Gravity Feed or Hydrostatic.

Whistles, Cocks, Fittings, Unions, Air Nozzles, Etc.



The Guide is a ready reference for selecting Valves, Boiler Mountings and Lubricating Devices in which products are grouped by pressure, type and use. List Price Schedule R1 gives new list prices of Lunkenheimer Products. Ask your local Lunkenheimer distributor for copies or write us direct.



ESTABLISHED 1862

THE LUNKENHEIMER CO.

"QUALITY"

CINCINNATI, OHIO, U. S. A.

NEW YORK CHICAGO
BOSTON PHILADELPHIA

EXPORT DEPT. 318-322 HUDSON ST., NEW YORK

28-55B-10

*One of 10** Traction-Driven COMBINATION SCRUBBERS *Offered by Finnell*

* A Range of Sizes and Types that . . .

Assures THE RIGHT MACHINE FOR THE JOB

Illustrated is a Combination Finnell (400 Series), of compact design and with 15-inch brush spread, developed expressly for the textile industry . . . for maintenance of floors with narrow spinning machine lanes and weave room alleys, and otherwise congested areas.

This Combination Finnell automatically distributes the correct amount of powder, thoroughly scrubs, removes dirty water and deposits, rinses, and dries the floor.

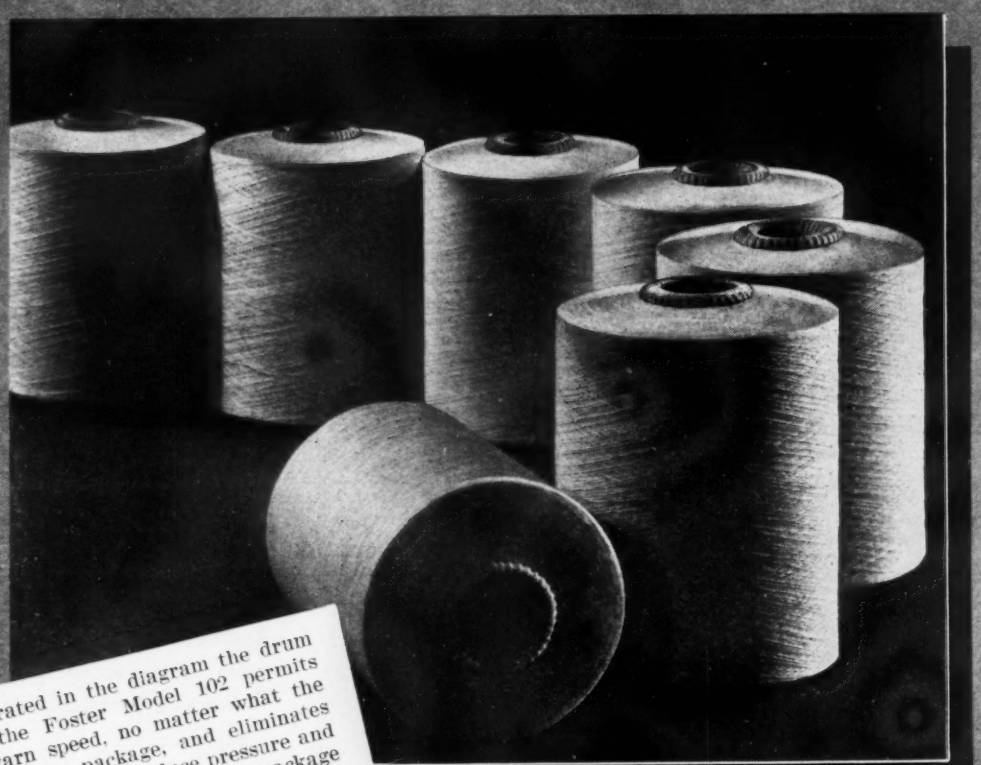
Also available in larger sizes with 18 and 24-inch brush spread, and with 30-inch brush spread as used for large open areas.

See it in action — on your own floors, under actual working conditions. Demonstration involves no obligation. Phone nearest Finnell branch, or write Finnell System, Inc., 1308 East Street, Elkhart, Indiana.

FINNELL SYSTEM, Inc.

Pioneers and Specialists in FLOOR MAINTENANCE EQUIPMENT

WHY THESE FOSTER WOUND PACKAGES PROMOTE UNIFORM DYEING



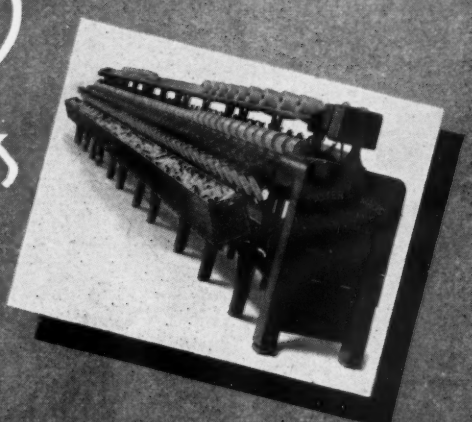
As illustrated in the diagram the drum drive on the Foster Model 102 permits uniform yarn speed, no matter what the diameter of the package, and eliminates the need of devices to reduce pressure and tension as the diameter of the package increases. Pressure and tension, once established, remain constant throughout the winding operation.

This principle of winding promotes exceptional uniformity in density of packages, which in turn promotes uniform dyeing.

Other advantages of the Model 102 are: Twice the production with ⅓ less labor, as compared with older models; 9 different angles of wind from 9° to 18° by changing four gears in the head end; a highly efficient ribbon breaker; and low maintenance cost due to simplicity and ruggedness of construction.

Write for Bulletin A-91.

FOSTER MACHINE CO.
WESTFIELD, MASS.
Southern Office—Johnston Bldg., Charlotte, N. C.

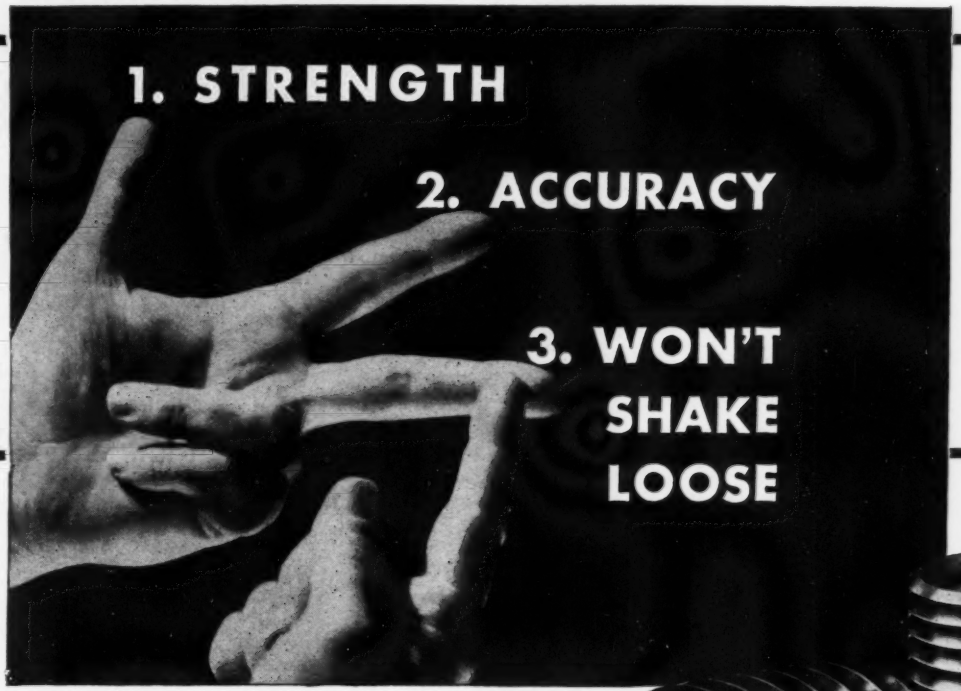


FOSTER MODEL 102

FOR WINDING COTTON, MERCERIZED, WOOLEN, WORSTED, MERINO, SPUN SILK AND SPUN RAYON YARNS

REDUCE MACHINERY MAINTENANCE COSTS and PREVENT BREAKDOWNS

Use the Screws with "The Third Factor"



The Strength and Accuracy of "Unbrako" Hollow Set Screws is unquestioned by their countless users to whom years of usage have proven their unvarying high quality. Now . . .

UNBRAKO

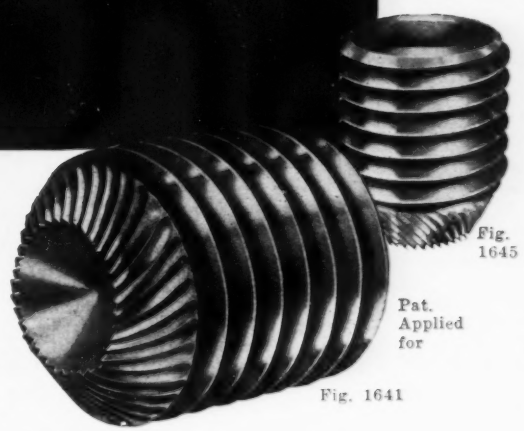


Fig. 1645

Pat. Applied for

Fig. 1641

SELF-LOCKING HOLLOW SET SCREWS with the Knurled Points

offer "The Third Factor" . . . Self-Locking. The screws are set up with only the normal pressure and like magic they lock there. No chance for them to vibrate loose. No danger of accidents or costly machinery breakdowns. The ingenious knurling around the cup point holds them tight until possible machine adjustments must be made . . . then with the ordinary hex bar wrench they are removed without undue effort and can be reused over and over again. Be sure to use them wherever ordinary set screws fail to hold.
Write now for samples and literature.

STANDARD PRESSED STEEL CO.

BRANCHES BOSTON DETROIT INDIANAPOLIS

JENKINTOWN, PENNA.
BOX 582

BRANCHES CHICAGO ST. LOUIS SAN FRANCISCO

You can also get added protection with

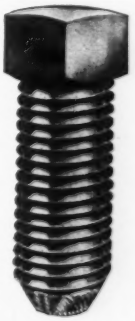


Fig. 1646 Pat. App. for

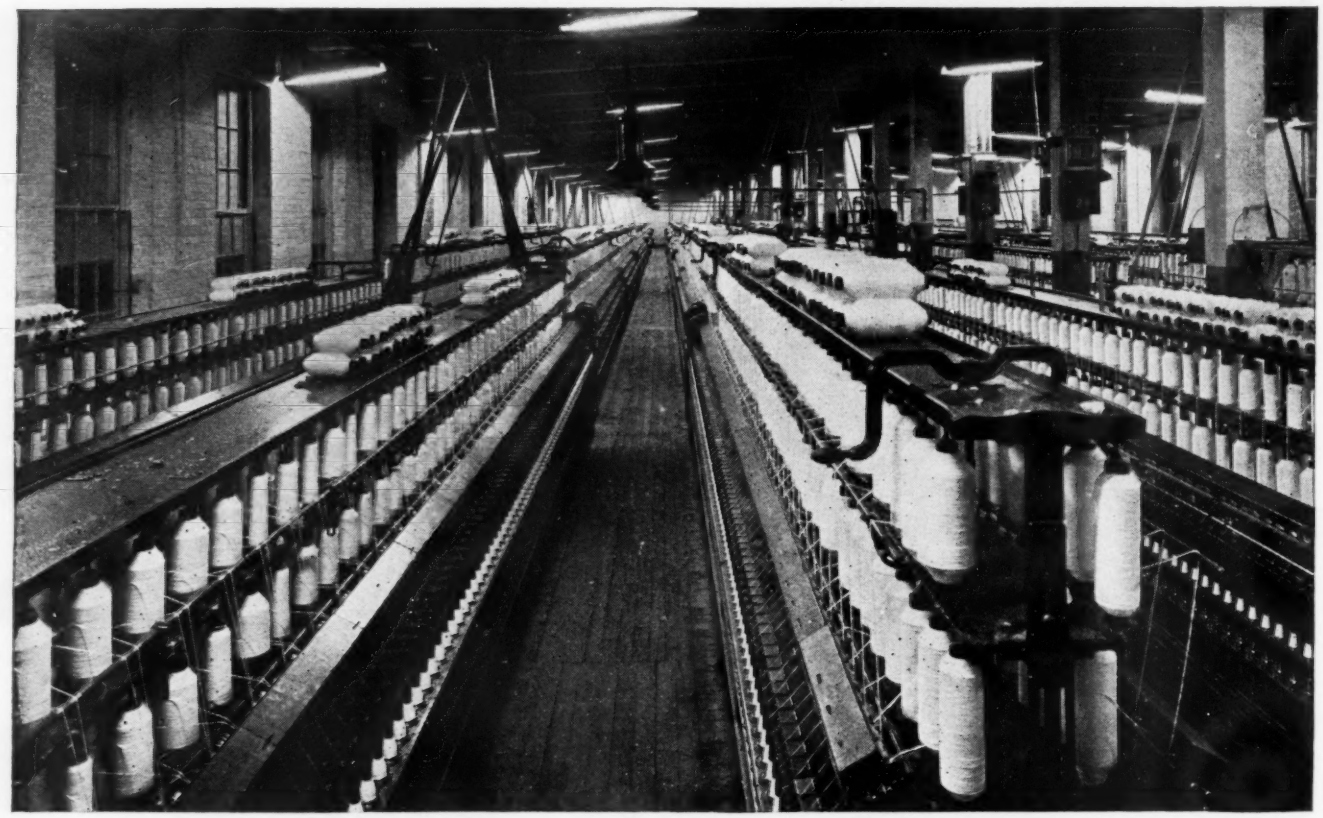
UNBRAKO

Self-Locking SQUARE HEAD SET SCREWS

The knurled self-locking feature now added to these long time favorites gives them undeniable advantages that all textile mill maintenance and operation men will quickly recognize. Get samples today.

IT'S EASY TO SEE

when seeing is made easy...



...with COOPER HEWITT MERCURY LAMPS

BETTER WORK... at higher production rate as a result of sharp, clean-cut visual impressions.

SHADOWLESS LIGHTING... results from the long-tube Cooper Hewitts, penetrating down and around objects for clarity of seeing.

REJECTS MINIMIZED... by elimination of nervous tension normally associated with eye fatigue.

GOOD SEEING... is good business. That's why leading mills everywhere prefer Cooper Hewitt light.

WHEREVER... seeing tasks are critical, Cooper Hewitt lighting will save money through greater productive efficiency and improved employee well-being, whether it be in the manufacture of full-fashioned hosiery, woolen fabrics, cotton or rayon products.

HOW... to enjoy the advantages of detail-revealing mercury light? Our representatives can advise you how — they know the economies as well as the engineering of modern industrial lighting. For full information write to General Electric Vapor Lamp Company, 853 Adams Street, Hoboken, New Jersey.

GENERAL ELECTRIC VAPOR LAMP COMPANY

946C

COOPER HEWITT MERCURY VAPOR LIGHT

YOU WON'T BE "CAUGHT NAPPING" IF YOU DEPEND ON *ASHWORTH NAPPER CLOTHING*

We are pioneers in the American napper clothing field. Voluminous case histories of past experience and a practical "napper man" on our service staff make it possible for us to intelligently analyze your napper clothing problems. Adequate production facilities and a sizeable stock of standard constructions also enable us to solve them quickly.

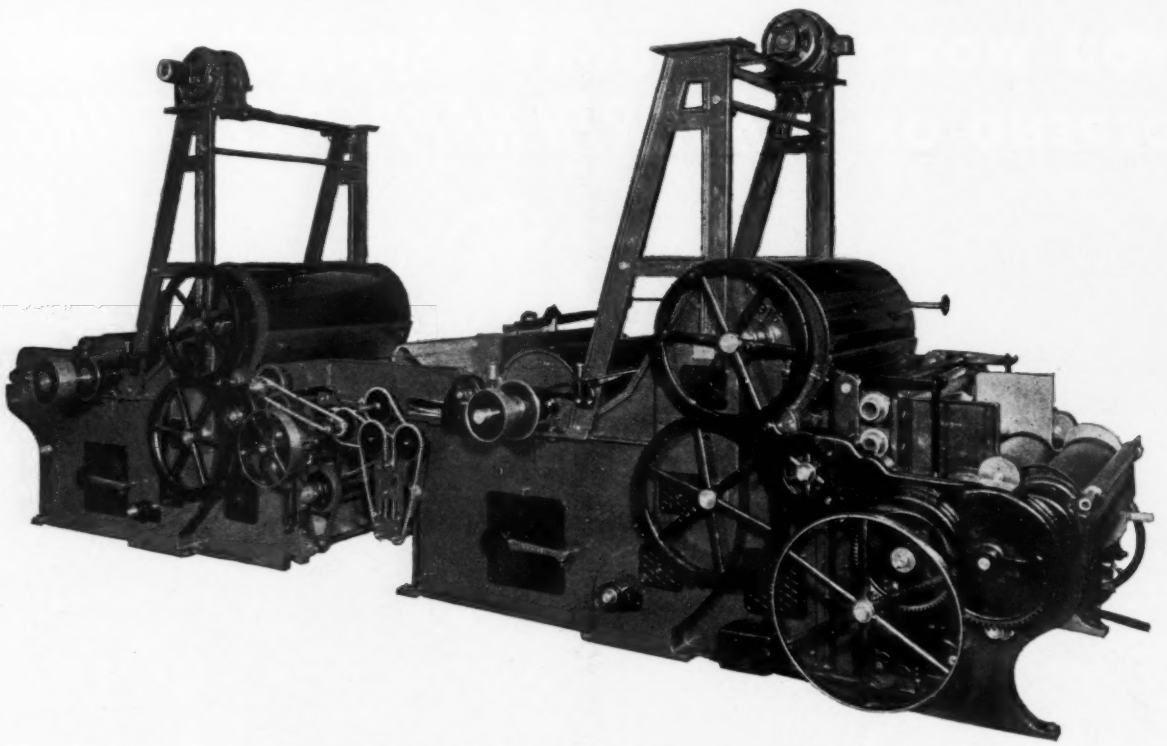
Whether your requirements are for napper clothing, card clothing or other similar products, you can depend on Ashworth for an uninterrupted supply, prompt repairs, and ready availability because of — — — — — — —

3 FACTORIES
FALL RIVER, WORCESTER, PHILADELPHIA

6 REPAIR SHOPS
FALL RIVER, PHILADELPHIA, CHARLOTTE, GREENVILLE, ATLANTA, DALLAS

7 DISTRIBUTING POINTS
FALL RIVER, WORCESTER, PHILADELPHIA, CHARLOTTE, GREENVILLE, ATLANTA, DALLAS

ASHWORTH BROS., INC., Woolen Div., AMERICAN CARD CLOTHING CO.
Factories, Repair Shops and Distributing Points as above. Southwestern Representative: Textile Supply Co., Dallas, Texas.
★PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for All Types of Napping Machinery • • Brusher Clothing and Card Clothing for Special Purposes • • Lickerin Wire and Garnet Wire • • Sole Distributors for Platt's Metallic Wire • • Lickerins and Top Flats Re-clothed at All Plants.



A NEW PICKER
BUILT INTO OLD FRAMES

The machine illustrated is an *Aldrich Synchronized Single Process Picker,* entirely new throughout except for the iron framework. This picker is designed to operate without the conventional hopper feeder and is fed directly from a *Gyrator Cleaning, Blending* and *Distributing Machine* equipped with automatic feed boxes.

The combination of the *Gyrator* with the *Aldrich Synchronizers* produces the cleanest and most uniform laps turned out by any picking system.

By utilizing your old frames, the cost of new pickers is cut in half.

AldricH MachinE

Greenwood, **WorkS** South Carolina

STANDARD SILICATE DIVISION
DIAMOND ALKALI COMPANY
STANDARD
SODIUM METASILICATE
CINCINNATI, OHIO - JERSEY CITY, N.J.

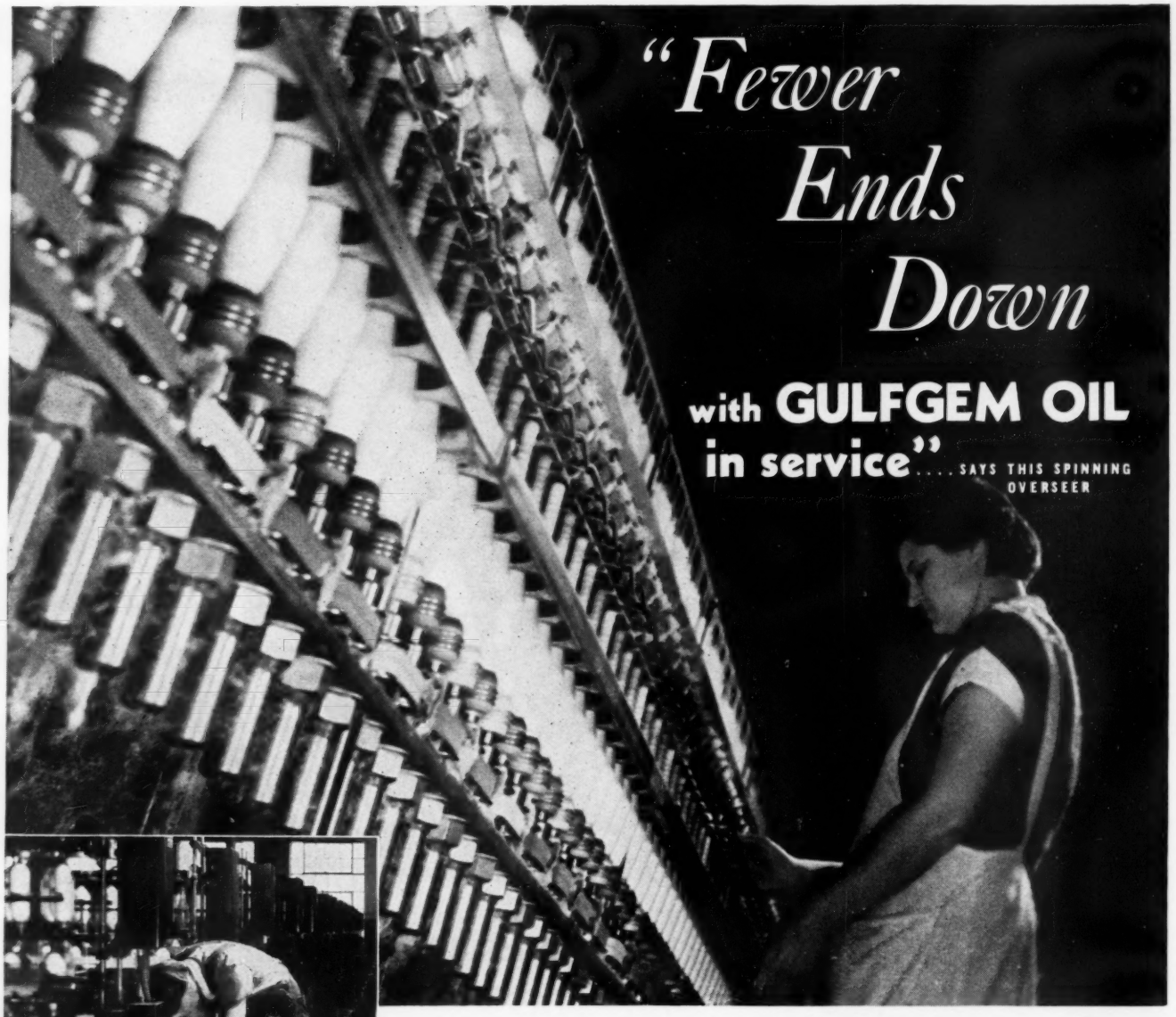
Standard SODIUM METASILICATE for RAYON boil-off solutions

STANDARD METASILICATE will improve your boil-off solutions for rayon piece-goods.* Its efficient emulsifying and detergent properties produce more level dyeing properties and brighter colors. The smaller amounts necessary for the proper pH values and its soap-sustaining power make Standard Metasilicate highly economical!

*Acetate excepted.

T-2-38

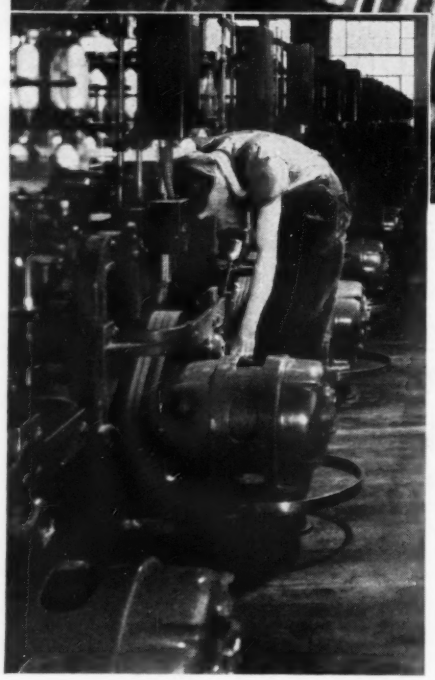
DIAMOND ALKALI COMPANY
Standard Silicate Division
General Offices · PITTSBURGH, PA.
Plants at Cincinnati · Jersey City · Lockport, N. Y. · Marseilles, Ill.



"Fewer Ends Down

with GULFGEM OIL in service"

SAYS THIS SPINNING OVERSEER



"We also use the highest quality lubricant we can get for the modern motor drives on our spinning frames—Gulfcrown Oil," says this spinning overseer. "Since we adopted Gulf's higher quality oils, our maintenance costs have been very low."

"Gulf's Higher Quality Oils help us make better production records."

"THERE is no doubt that Gulfgem Oil has helped us get smoother operation from our spindles," says this mill overseer. "We now have fewer ends down and our production has been greatly improved."

Here is one reason why Gulfgem Oil is making such outstanding records in leading mills: *It has been refined not only by conventional methods, but by Gulf's exclusive Alchlor process.* This special treatment removes undesirable portions of the oil which cause oxidation and gum formation. This finer and purer oil may be kept in use over a longer period of time without deterioration, assuring smooth operation, lower power consumption and lower maintenance costs.

Put Gulfgem Oil to work in your spinning room as quickly as possible — and get the economies which accompany the use of this modern spindle lubricant. Gulf's higher quality oils and greases are readily available to you — they are distributed through more than 1100 warehouses from Maine to Texas.

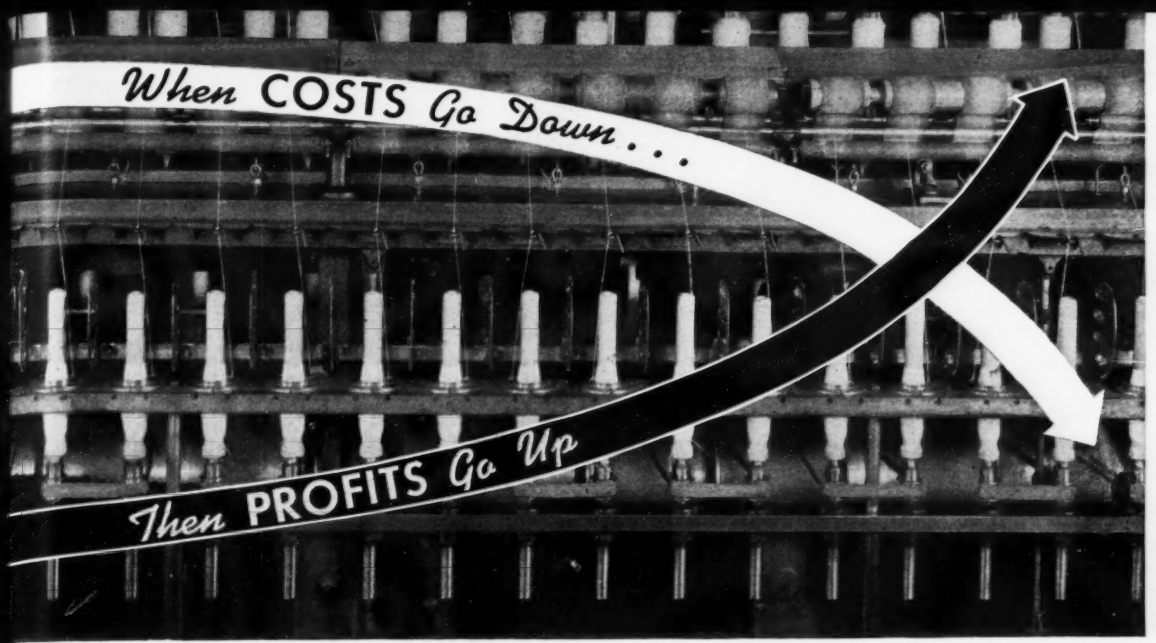
GULF INDUSTRIAL LUBRICATION

GULF OIL CORPORATION
GULF REFINING COMPANY
GENERAL OFFICES: GULF BUILDING, PITTSBURGH, PA.

● **THIS SUPERINTENDENT** of a large mill says, "GULFGEM is the best spindle oil I have used in 36 years of cotton mill work. Since switching to GULFGEM OIL we have eliminated all blackened yarns which were due to spindle oil misting."

● **ANOTHER MILL SUPERINTENDENT** says, "In addition to securing better all-around results with GULFGEM OIL we have reduced spindle oil consumption materially since we standardized on this higher quality Gulf lubricant."

● **THE SUPERINTENDENT** of a large tire fabricating mill says, "We have completely eliminated vibration in our large twister spindles since changing to GULFGEM OIL for spindle lubrication. Our production has been greatly improved."



MARQUETTE NOVIBRA TEXTILE SPINDLES TRADE MARK

MARQUETTE NOVIBRA

(PATENTED CONSTRUCTION)

HIGH-SPEED ROLLER-BEARING SPINDLE

SETS NEW RECORDS!

This amazing new spindle will give you Faster Production, Lower Costs, Less Vibration, Better Results, Bigger Profits

HIGHER SPEEDS

The MARQUETTE NOVIBRA is essentially a high-speed balanced spindle. The maximum speed at which it can be satisfactorily operated is governed entirely by the maximum speed of the spinning and twisting machinery and the speed at which the yarn may be spun or twisted.

LESS VIBRATION

MARQUETTE NOVIBRA spindles reduce vibration to a minimum. Even with heavy packages and high speeds, the full-floating damping footstep bearing allows the spindle to center itself and to run in the center of the rotating mass.

POWER SAVING

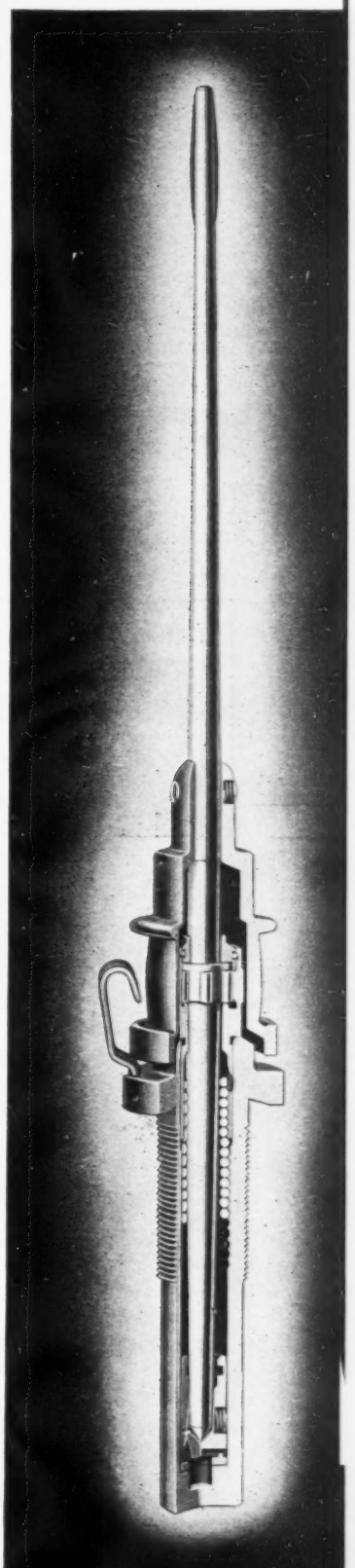
MARQUETTE NOVIBRA'S roller bearings and precision manufacture are your assurance of free-running, anti-friction operation. Some mills have made careful tests of their savings in power consumption through the use of this spindle, and they report savings as high as 48%. This is an important factor when you consider that approximately half of the power used by an average mill is consumed in the spinning room.

LOWER COSTS

MARQUETTE NOVIBRA spindles will reduce your costs in many ways. Higher speeds result in lower cost of production per pound of yarn. Savings in power consumption effect a direct cut in operating expenses. Maintenance work is reduced to a negligible point and lubrication is required only at infrequent intervals. It's unnecessary to point out that lower costs mean higher profits.

BETTER YARNS

MARQUETTE NOVIBRA spindles actually enable you to produce better yarns—even at greatly increased speeds. You are assured of fewer interruptions and less breakage. Twisting is more uniform and can be accurately controlled within closer tolerances.



Write for descriptive circular, prices and full information. See for yourself what MARQUETTE NOVIBRA can do for YOU!

THE MARQUETTE METAL PRODUCTS CO.

1170 GALEWOOD DRIVE CLEVELAND, OHIO

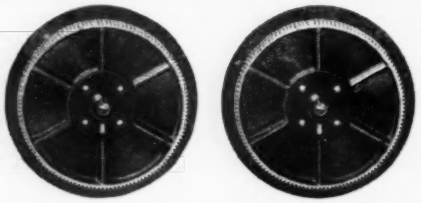
GREENVILLE, S. C. · · · BYRD MILLER · · · 908 WOODSIDE BLDG.

KINGSTON, PA. · · · STANLEY MORTON · · · 26 W. DORRANCE ST.

LOOM BEAMS

PROVED—
By Performance

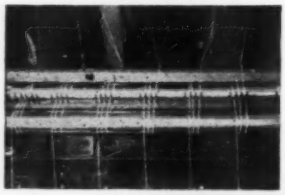
BEAM HEADS



BEAM BARRELS

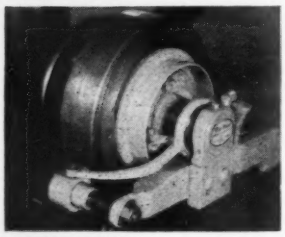
Superior in Operation and Economy

Other WEST POINT Products



THE BACHMAN GUIDE . . . eliminates heavy top rollers. "Blow Outs" reduced about 90%. Permits increase in twister speed.

ENERGY LOOM DRIVE . . . makes possible higher production per loom per hour . . . provides smoother loom operation.



GEARS . . . Gears of all types —noted for their efficiency and durability.

West Point loom beams, beam heads and beam barrels are high quality products and whose merits have been established by satisfactory service to satisfied customers.

West Point beam barrels are made of a select grade of suitable wood, thoroughly seasoned. Journals are made from a tough plow steel to increase the wearing life. The wood grain is protected from moisture by a coat of special sealer and lacquer. All barrels are machined straight and true.

West Point beam heads are made of a high grade cast iron and are designed to reduce breakage. The pocket and bore of head is machined to fit barrel snugly and squarely.

West Point loom beams run true. Their sturdy and rugged construction will give long and satisfactory service. Our loom beams will help you to increase your weave room efficiency.

Also manufacturers of special textile machinery, textile repair parts, gears, slasher modernization equipment, and cloth room machinery.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

ALL STAINLESS STEEL VERTICAL SPINDLE PACKAGE DYEING MACHINE

by *Butterworth*

Low liquor ratio
Automatic reversal (if desired)
No stains or rust spots
Uniform dyeings
Temperature recording instruments

SIZES

80 packages	240 packages
120 packages	320 packages
160 packages	400 packages

And last, but not least, the new one piece Dyeing Spindle (pat. applied for). It can't clog or get out of order.

Details promptly upon request.

H. W. BUTTERWORTH & SONS CO.
PHILADELPHIA, PA.

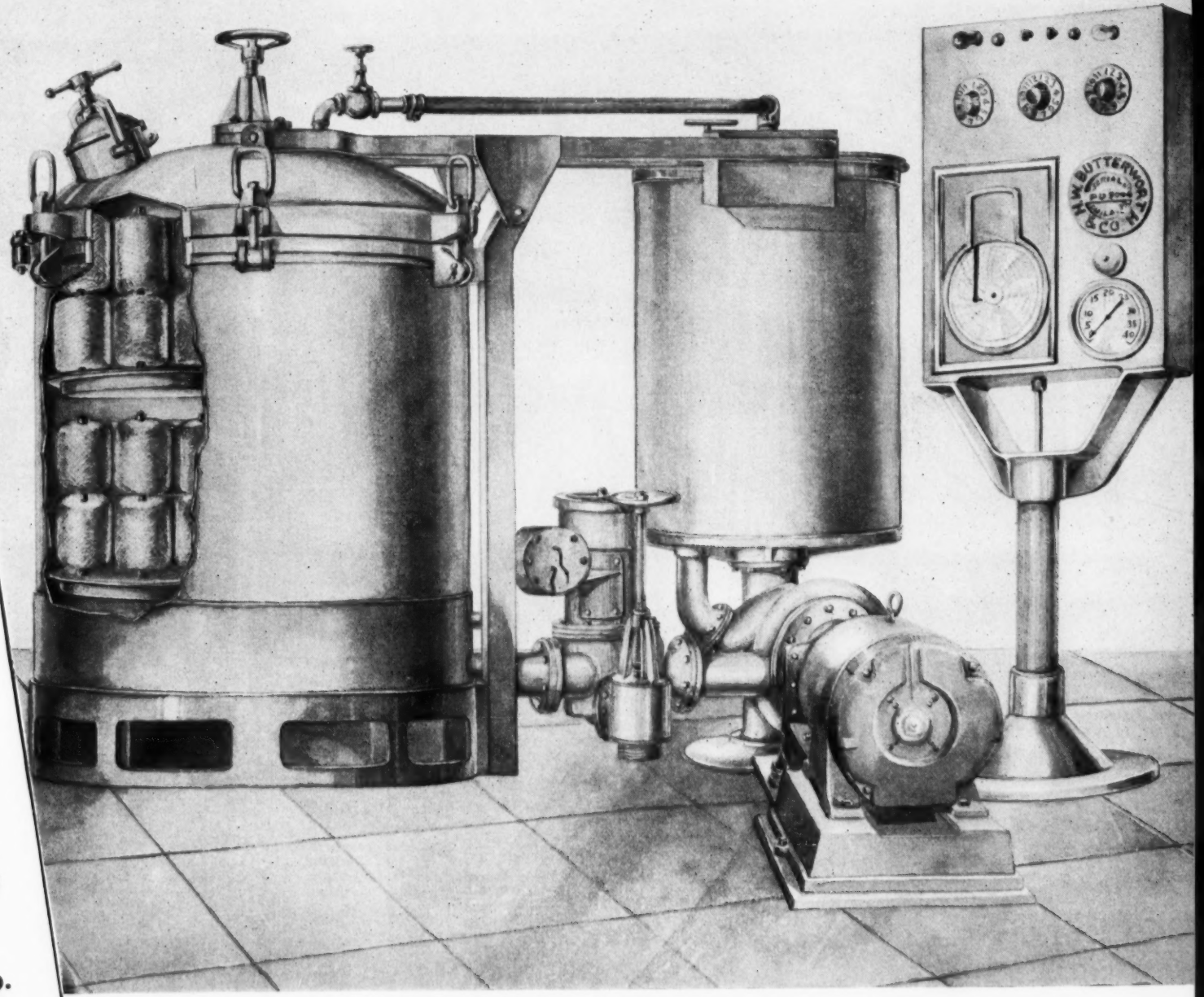
Established 1820

PLANTS at PHILADELPHIA and BETHAYRES, PA.

New England Office:
TURK'S HEAD BUILDING
Providence, R. I.

Southern Office:
JOHNSTON BUILDING
Charlotte, N. C.

In Canada:
W. J. WESTAWAY CO.
Hamilton, Ontario



these endorsements of FOXBORO DYE MACHINE CONTROL

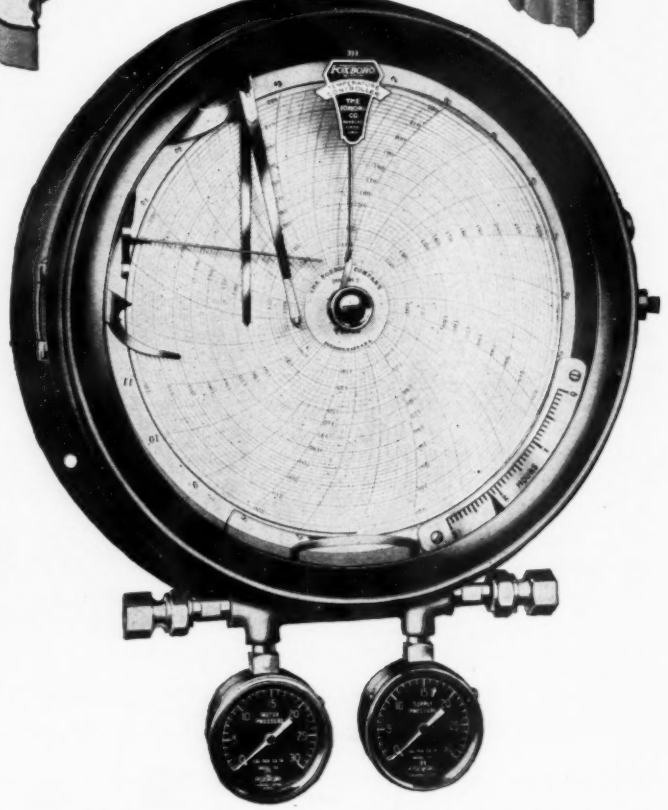
North Carolina Mill: "Chief dyer advised that work has been running much more uniform since installation of Foxboro automatic control. Very well pleased with investment."

Georgia Mill: "This control is operating perfectly and the dye house superintendent is enthusiastic. He volunteered to recommend Foxboro instruments to anyone interested."

Massachusetts Mill: "Both chemist and chief dyer well pleased with Foxboro installation. Have done most difficult job with entire satisfaction. Time required for each lot has been reduced."

In well run textile plants you will find the Foxboro Dye-Machine Controller. It offers six big savings: more uniform dyeing, degumming economies, steam savings, freedom for operators, reduction in additions, reduction in re-dyes.

Foxboro can also help you realize economies in many other textile mill applications—slashing, bleaching, kier boiling, piece dyeing, drying, scouring, steaming and finishing. Write for detailed information.



FOXBORO

REG. U. S. PAT. OFF.

RECORDING CONTROLLING · INDICATING

Instruments

Certified ACCURACY RESPONSE

TEMPERATURE · LIQUID LEVEL
PRESSURE · FLOW · HUMIDITY

THE FOXBORO COMPANY
18 Neponset Avenue, Foxboro, Massachusetts, U.S.A.
Atlanta Office: 101 Marietta Street Building
Branch Offices in 25 Principal Cities

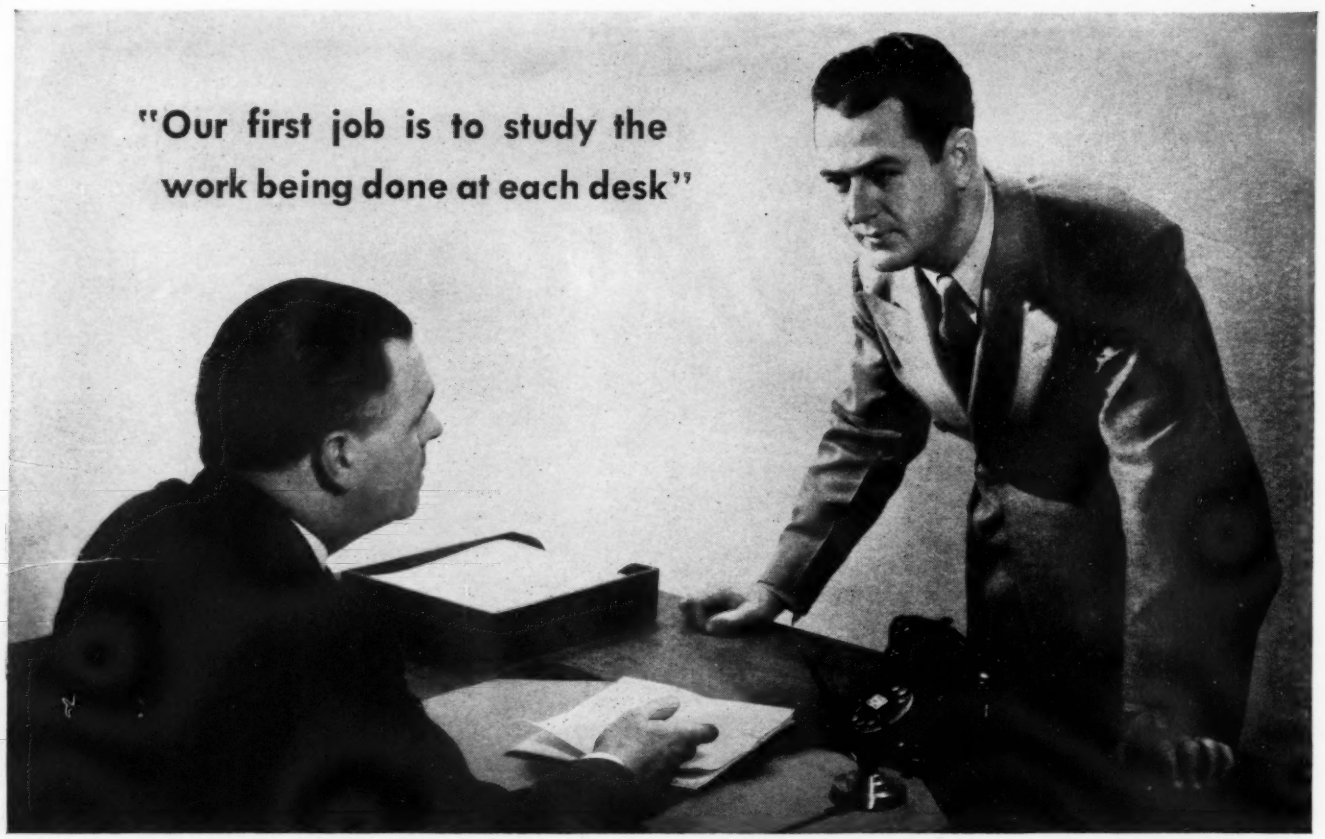
In the production of alkalis at Mathieson's Saltville, Virginia plant, it's Bryant Snead's job to pilot samples regularly through this important plant control test—the analysis of gases from the carbonating towers. Like other Mathieson veterans, Snead is steeped in the Mathieson tradition of painstaking, extra-precautionary care that have made Mathieson Chemicals famous for their purity and uniformity.

Today Mathieson Caustic Soda, Soda Ash, and Bicarbonate of Soda are in demand in a wide range of industries. Whether produced at Saltville or at the Mathieson plant at Lake Charles, La., their high purity and uniformity remain a constant factor, justly prized in every industrial field where alkalis are used.

Mathieson Chemicals

THE MATHIESON ALKALI WORKS (INC.)
60 E. 42ND STREET, NEW YORK, N. Y.

SODA ASH . . . CAUSTIC SODA . . . BICARBONATE OF SODA . . . LIQUID CHLORINE . . . BLEACHING POWDER . . . HTH PRODUCTS . . . AMMONIA, ANHYDROUS and AQUA . . . FUSED ALKALI PRODUCTS . . . CCH (INDUSTRIAL HYPOCHLORITE) . . . DRY ICE . . . LIQUID CARBON DIOXIDE . . . ANALYTICAL SODIUM CHLORITE



To solve the Hours Problem in the office eliminate these handicaps

EXPENSIVE BOTTLENECKS If any department or individual is obliged to be inactive when work "clogs" at some other point, the cause of the bottleneck should be discovered. A slight change in equipment or routine may insure a more even flow of work.

ANNOYING PEAK PERIODS If sales, purchases, costs, and other figures are merely recorded from day to day, peaks arise when employees must rehandle the figures to write customers' statements, take a trial balance, analyze accounts, or complete statistical reports. Recent machine developments make it possible to iron out peaks by eliminating costly rehandling of figures.

UNNECESSARY DUPLICATIONS Duplication of media or records in a separate operation takes time and creates the possibility of errors. If unproductive intermediate steps are required to fit the work to the present machines or system, investigate "direct-to-final-results" methods.

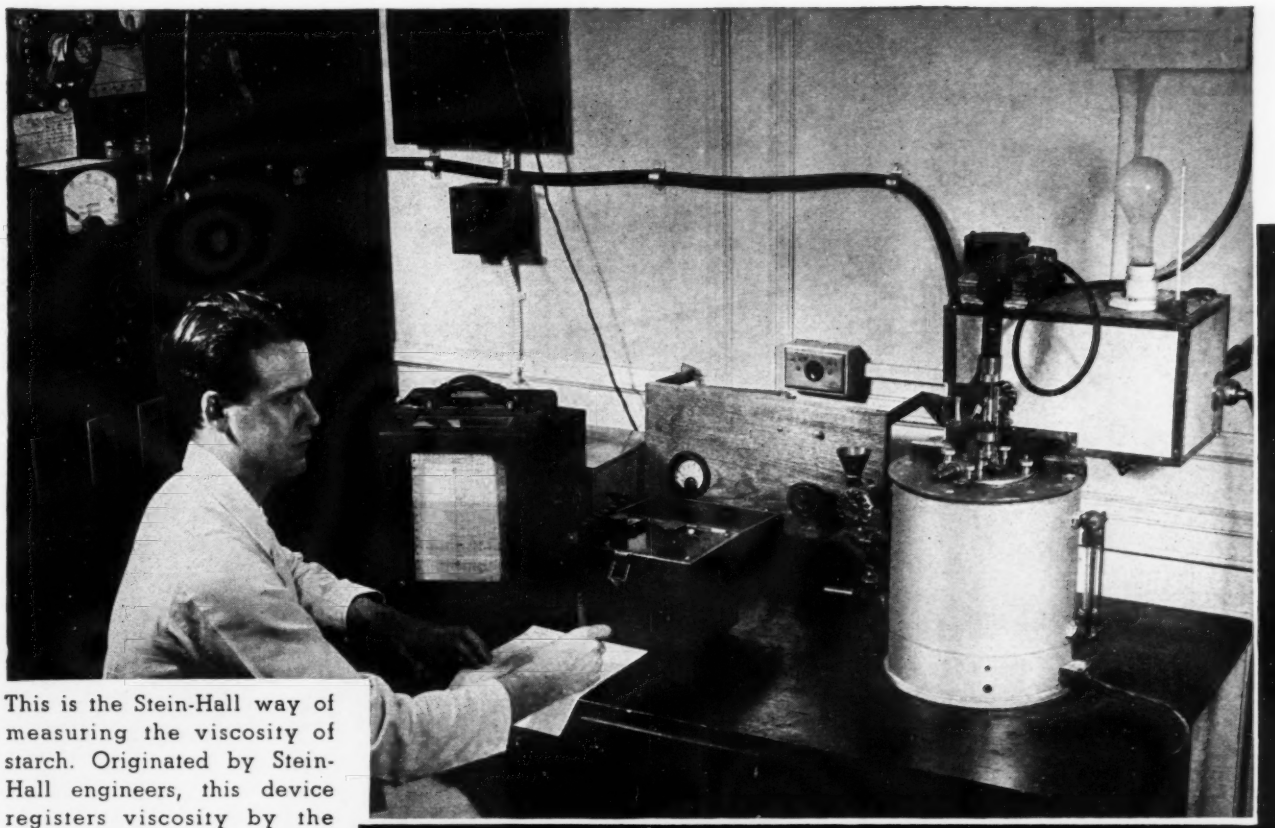
NEEDLESS OPERATIONS Studying the work at each desk may reveal how a few short-cuts would save thousands of needless operations on your figuring, form-writing and statistical work.

SEND FOR THIS BOOKLET!

For the executive concerned with the problem of conserving clerical hours, this new booklet contains many specific suggestions for readjusting office routine. Send for your free copy.

Burroughs will be glad to help you make a desk-to-desk survey of your present office routine. Call your local Burroughs office, or, if more convenient, write direct to—
BURROUGHS ADDING MACHINE CO., 5279 SECOND BLVD., DETROIT

Burroughs



This is the Stein-Hall way of measuring the viscosity of starch. Originated by Stein-Hall engineers, this device registers viscosity by the amount of electric power required to drive a series of blades through the starch solution. It has thrown a new light on the behavior of starches and has helped solve many practical problems.

A STARCH SERVICE.. that *Starts* in the "LAB!"

THE STEIN-HALL way is the scientific way of SPECIAL research with modern testing equipment - under the cooperative effort of skilled laboratory technicians and a trained field staff. ★ Stein-Hall laboratories are a reliable source of technical advice - the STARTING point of Service in starches, dextrines and gums for sizing, printing and finishing. ★ Through fundamental research and the solution of specific problems, Stein-Hall has helped mill men increase production, improve quality and effect substantial economies. ★ This Service comes to you without obligation.

STEIN, HALL & COMPANY, Inc.

285 MADISON AVENUE NEW YORK

ESTABLISHED 1866

• LABORATORIES AT... NEW YORK • CHARLOTTE • PROVIDENCE

STARCHES, DEXTRINES AND GUMS FOR EVERY TEXTILE PURPOSE

Teeth in TUFFERIZED Card Clothing

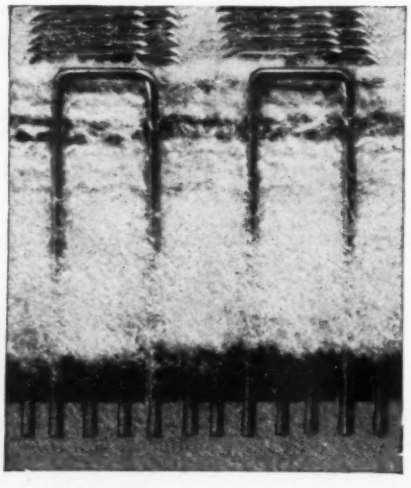
PATENT APPLIED FOR

are also straight, uniform and evenly spaced

Radio City Music Hall Rockettes, world famous precision dancers, devote hours to tedious training. Through hours of research, we have developed the new precision machine parts which make the wires of Tufferized Card Clothing uniform in size, evenly spaced, and perfectly straight. New Tufferized shears cut each wire clean and sharp without wire burrs. New Tufferized doublers form each wire with a square crown. Wires are parallel and exactly the same length.

Tufferized Card Clothing made to these precision standards prevents any change or variation in position when mounted on your cylinders. It allows closer and more even setting of your rolls and produces more uniform and smoother carding.

Write for additional information or ask our Representative



Micro-Photograph shows how Tufferized Card Clothing wires seat square, flat, and firmly into the foundation with wires parallel . . even in length . . spaced uniformly

HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: **WORCESTER, MASS.**

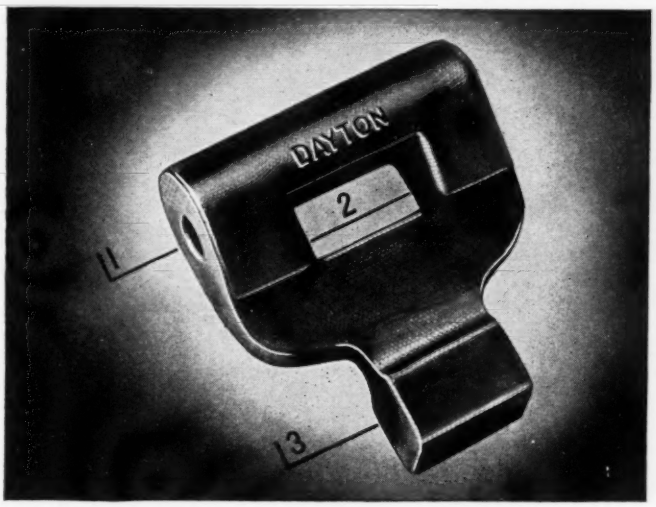
Southern Plant: 244 Forsythe St., Atlanta **Branch Offices:** Philadelphia, Dallas

Canadian Agents: Colwool Accessories, Ltd., Toronto 2, Canada

Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards — Napper Clothing, Brush Clothing, Strickles, Emery Fillets, Top Flats Recovered and extra sets loaned at all plants — Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant — Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles

For Increased Production **DEMAND—**

DAYTON Blue Label LOOM SUPPLIES



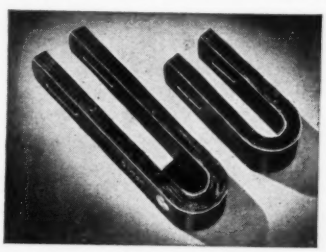
Only the Dayton Reversible Drop-Box Picker has this exclusive "Three-Point Density" construction.

Installation After Installation Proves the Greater Economy of These Products Backed by Eight Years Experience, Development, Testing and Production

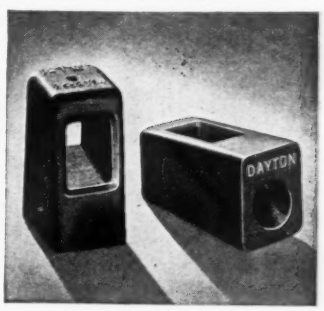
DAYTON BLUE LABEL LOOM SUPPLIES are products of Dayton's famed laboratory controlled manufacturing methods. They represent the best that quality materials, skilled labor, modern equipment and trained technical experts have so far produced. They embody the results of over *eight years* experience in development, testing and production. Each product in the Dayton line of Blue Label Loom supplies is designed and manufactured specifically for the job it is intended to do. And installation after installation has proved their greater economy. Write today for proof of their money-saving advantages or get complete details from your nearest distributor. The Dayton Rubber Mfg. Co., Dayton, Ohio, and Charlotte, N. C.

REVERSIBLE DROP-BOX PICKERS are made specifically for three purposes with the exclusive "Three-point Density" construction. *Point No. 1*—Their composition is harder around the spindle rod. At this point a self-lubricating resinous bearing which will not become egg-shaped in service is used. *Point No. 2*—A softer composition is used at the picker stick contact. *Point No. 3*—Still another composition is used at shuttle contact to eliminate shuttle point loosening. So this "Three-point Density" construction accomplishes these three purposes: 1. Gives maximum cushion . . . positively will not wear the picker stick. 2. Gives proper cushion to shuttle point. 3. Gives perfect throw to shuttle throughout the life of the picker.

DAYTON LUG STRAPS are specifically built with these 5 essential qualities: 1. They have extra strength beyond every requirement. 2. They have sufficient cushion to assure protection to other parts, such as cam rollers and picker sticks. 3. They have the desired resilience plus the ability to absorb shock with immediate come-back. 4. They never require adjustment. 5. They have long, trouble-free life. Their low first cost assures you greater economy. Their freedom from adjustment and their constant power maintenance assures you increased production at lower cost.



DAYTON LOOP PICKERS—Special fabrics bonded together with extra strong, resilient rubber give Dayton Blue Label Pickers the proper cushion and approximately twice the strength of other pickers of this type. Easy to install—they fit the stick and yet have sufficient reserve stretch to accommodate large and off-size sticks. Molded under controlled heat and pressure, they keep their shape and stay "put" on the stick—assure maximum efficiency and reduce shuttle costs. Dayton Loom Supplies are protected by U. S. Patents issued or pending.



THE DAYTON RUBBER MFG. CO.
Dayton, Ohio and Charlotte, N. C.

DISTRIBUTED BY

Greenville Belting Co., Greenville, S. C. • Greenville Textile Supply Co., Greenville, S. C. • Odell Mill Supply Co., Greensboro, N. C. • The Textile Mill Supply Co., Charlotte, N. C. • Industrial Supplies, Inc., LaGrange, Ga. • Young & Vann, Birmingham, Ala. • Textile Supply Co., Dallas, Texas • Providence Mill Supply Co., Providence, R. I. • F. L. Hervey Co., Fall River, Mass.

Dayton
Blue Label LOOM SUPPLIES
MADE BY THE WORLD'S LARGEST MANUFACTURER OF V-BELTS

TO THE COTTON MILL CONTEMPLATING PART WOOL OR WORSTED FABRICS

James Hunter Machine Company cordially invites the cotton mill contemplating the possible manufacture of part wool or worsted cloths to avail itself of the fund of information in Hunter Engineering files - and without obligation.

Hunter engineers possess the accumulated experience of 92 years of designing and building equipment for the woolen and worsted as well as the cotton industry..... In finishing, dyeing and drying particularly, Hunter offers any interested cotton or rayon mill machine and process information not otherwise readily obtainable.

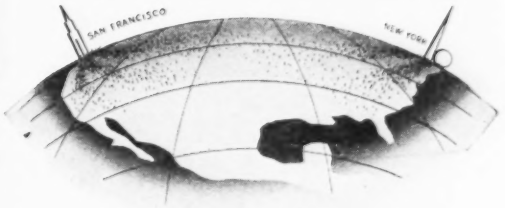
Your inquiry will be held in strictest confidence. Furthermore your inquiry obligates you in no way whatsoever. For full details of what can be done, and what has been done write

JAMES HUNTER MACHINE CO.

NORTH ADAMS, MASS.

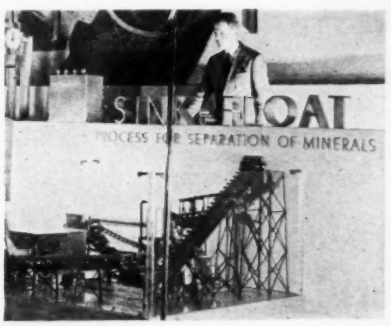
HOW CHEMICAL RESEARCH CONTRIBUTES TO BETTER LIVING FOR AMERICA

Symbolic of the better things that have come from scientific research—a striking mural at du Pont's New York Exhibit—Chemistry's contribution to mankind.

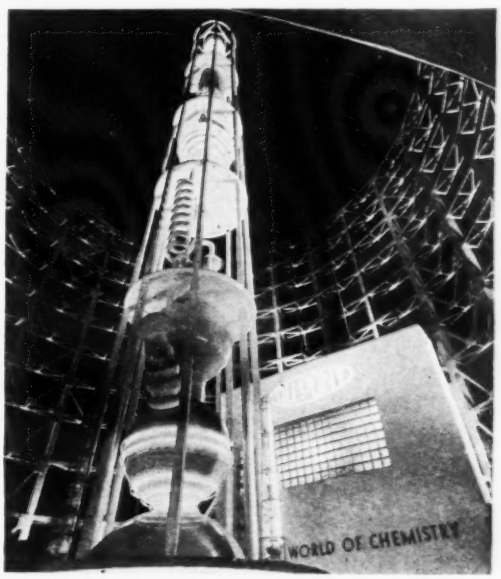


The two great World's Fairs—San Francisco and New York—with their dramatic presentations of the accomplishments of American genius and enterprise are more than educational exhibits. They provide inspiration out of which will come many new things for the world of tomorrow. At each of these fairs, du Pont is showing how modern applied chemistry is daily bringing new comforts, new opportunities for gainful employment, better things for living—tangible evidence that everybody benefits with chemical progress.

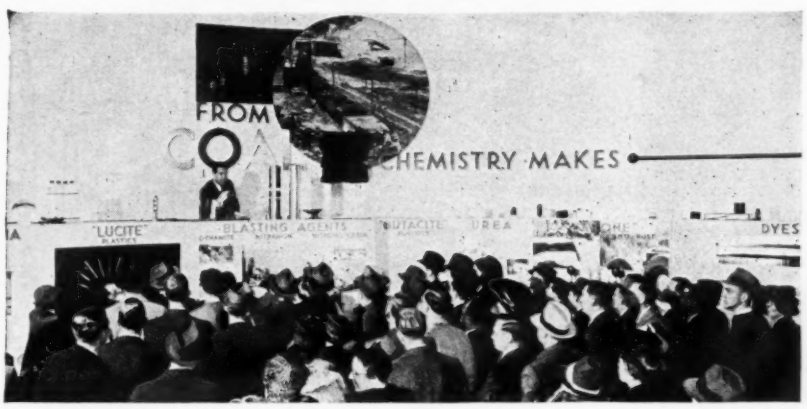
Millions will hear the story of the inner workings . . . will figuratively be taken into the laboratory and plant, and will see, step by step, how from such raw materials as coal, cotton, wood, vegetable oils, ores and salt, chemistry has produced many products once unknown but now considered every day necessities.



It took 34 years of research by chemists and chemical engineers to perfect the "Sink and Float" process for gravity separation of coal and minerals by means of chemical "parting liquids." Still in its infancy, the development marks a long stride forward for the mining industry.



The 107 ft. Chemical Tower at the entrance of the du Pont building, New York World's Fair, symbolizes modern applied chemistry and research.



Improved products and new products—results of the close cooperation between du Pont research and industry—are on display and demonstrated at both Fairs.

AN INVITATION

YOU are cordially invited to visit the du Pont Exhibits. In both you'll find much that is interesting and new. You will see and hear about products which will stimulate your imagination . . . and get ideas which you may be able to apply profitably in your own business.

DU PONT

E. I. du Pont de Nemours & Company, Inc.

The R. & H. Chemicals Department, Wilmington, Del.

District Sales Offices: BALTIMORE, BOSTON, CHARLOTTE, CLEVELAND, CHICAGO, KANSAS CITY, NEWARK, NEW YORK, PHILADELPHIA, PITTSBURGH

Grab yourself a chair!

and pull up at the busiest conference on industrial advertising you ever heard of.

Two hundred controversial subjects will be discussed in clinics large and small. "How to improve your effectiveness as an advertising manager" will be one of the large clinics. The first day is Executive's Day (bring your boss).

Even at lunches you will be grouped with members and guests having identical interests.

Take advantage of low transportation rates, hotel accommodations at no increased cost and a guided tour of the industrial exhibits at the World's Fair with a day and a half left over to yourself! Make your hotel reservations early!

Some of the Clinic Subjects

FIELD WORK	PUBLICITY
PERFORMANCE DATA	MARKET DATA
DIRECT MAIL	MEASURING RESULTS
INDUSTRIAL EXHIBITS	CATALOGS
READERSHIP VALUES	SALES MANUALS

TIE-UP WITH SALES FORCE

EXHIBITS
•
AWARDS
•
LADIES' PROGRAM
•
DINNER AND SHOW AS USUAL

National Industrial Advertisers Association
100 East Ohio Street **Chicago, Illinois**
2-39

Financing Cost Easily Offset By Savings

CALIFORNIA

After using open account financing for four months, this client writes: "We are very much pleased. By discounting our receivables we are able to take advantage of discounts offered us by suppliers, and cut down our purchasing costs . . . The cost of your service is very nominal and can be absorbed easily by the saving obtained."

DELAWARE

This concern says: "Your service is dependable. We receive our checks on just the days that we need them. The dispatch of our receivables has enabled us to get our money in this manner instead of from the banks. We do not have any bank loans at all. We depend entirely upon your service."

OPEN ACCOUNT FINANCING SUFFICIENT—NO BANK LOANS

First Quarter Results Show Increased Volume

OREGON

Sceptical at first, of the benefits, this client decided to try our service. Here is the first report: "Checking results for the first quarter of 1939 we find that the volume we have been able to transact has increased considerably, due in no small degree to your very efficient handling of our invoices . . .We were somewhat dubious, but do not hesitate to say now that we are thoroughly sold on this form of financing."

★ ★ ★ ★

Good business news comes to us from concerns we serve in every section of the country. Freedom from red tape; no maturing loans to face; double and triple the sales volume without additional capital; no interference with their management . . . these are some of the advantages you too can enjoy through "NON-NOTIFICATION" OPEN ACCOUNT FINANCING. Let us send you the interesting and informative story of "CAPITAL AT WORK". Write to Dept. "TM". No obligation.

COMMERCIAL CREDIT COMPANY

"Non-Notification" Open Account Financing

BALTIMORE

BOSTON NEW YORK CHICAGO SAN FRANCISCO PORTLAND, ORE.

CAPITAL AND SURPLUS MORE THAN $65,000,000

Aye, SIR

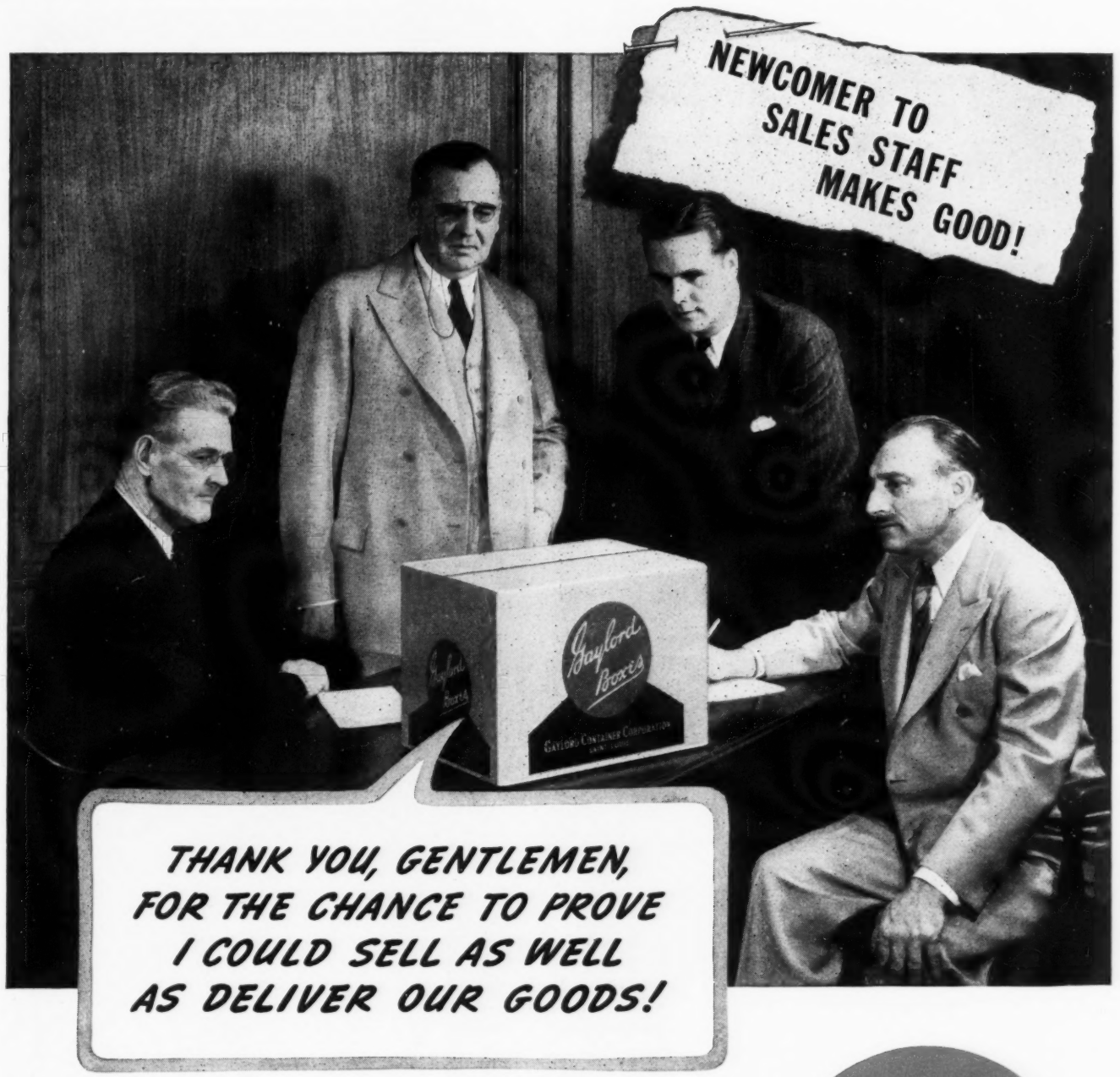
AND A **SAVINGS**, TOO
with
JACOBS
Individualized

- LABELS
- BANDS
- TICKETS
- STICKERS
- HANG TAGS
- BOX TOPS
- RIDERS

an Inquiry will not obligate you

THRIFT

JACOBS
GRAPHIC ARTS COMPANY
CLINTON, S. C.


NEWCOMER TO SALES STAFF MAKES GOOD!
Gaylord Boxes
THANK YOU, GENTLEMEN, FOR THE CHANCE TO PROVE I COULD SELL AS WELL AS DELIVER OUR GOODS!

Let Gaylord show you how to add power to your merchandising with containers

Are your shipping containers selling as well as delivering the goods? They are for many concerns whose sales and advertising managers have made them a part of their merchandising campaigns.

Through close cooperation with merchandising staffs, Gaylord master designers have recently transformed many shipping containers into hard-working sales makers.

May we suggest you invite your shipping containers to your next merchandising conference? Then, let Gaylord show you how to make the newcomer make good! Phone or write our nearest office for further details. No obligation.

Gaylord Boxes

Also Gaylord Folding Cartons... Grocery Bags and Sacks... Kraft and Specialties.

GAYLORD CONTAINER CORPORATION, General Offices: SAINT LOUIS

There's a Gaylord plant or sales office in your territory

A. E. STALEY MANUFACTURING COMPANY

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ATLANTA
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VOL. 103 — AUGUST, 1939 — NO. 8

COTTON
SERVING THE
Textile Industries

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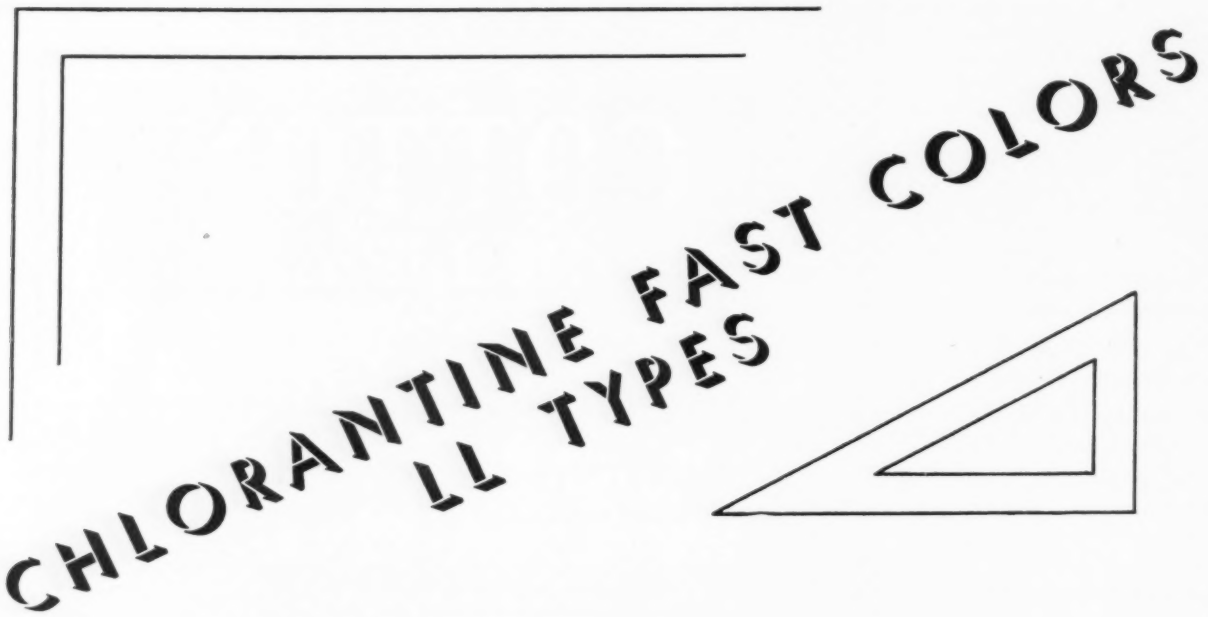

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for drapery and upholstery fabrics,

have made the textile industry conscious of

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THEY HELP SELL YOUR GOODS

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SOCIETY OF CHEMICAL INDUSTRY IN BASLE

Vat Dyes of
THE DOW CHEMICAL COMPANY

SHORTS AND REMNANTS

The World Moves On and We Move With It

● Both readers and advertisers will be interested in noting that the October issue of COTTON, Serving the Textile Industries, will be the bi-ennial Modern Equipment and Process Number with major attention being focused on recent developments in machinery, equipment and processes for textile use. Many of these are noted at the time of development in our advertising pages and under our new equipment section but it is interesting to sit down and go over at one time the developments of a two year period. Mill officials, superintendents, operating executives liked the idea as presented by COTTON ten years ago so well that this has been continued biennially. Manufacturers are invited to send data on their new products for textile mills; and readers to look forward to this issue in October.

◆

Interest in Rayon

"I believe you stated that you had a three year record on this subject. If you can, please inform me how I may obtain this record, as I am interested in rayon and its manufacture. . . . I want very much to know more about it."

H. B. TURNER

Georgia-Kincaid Mills,
Griffin, Georgia.

"I shall very much appreciate your forwarding me record of the twenty-four articles published during the past three years on spun rayon."

D. M. DAVIDSON

Minneola Mfg. Co.
Gibsonville, N. C.

". . . there is an item in regard to twenty-four articles that have appeared from time to time in your publication in connection with manufacturing spun rayon. We would be interested in receiving copies of these articles if they are available."

W. V. BOYD

Canadian Cottons, Ltd.
Montreal, Canada.

"Attached are two clippings taken from recent issue of COTTON. Would be pleased if material therein described be billed and sent to me."

HERBERT H. NEUMAN

Lockwood Company,
Waterville, Maine.

"We are at present running on rayon and cotton mixes using 1 inch cotton with 1 1/16 in. 4½ Denier spun rayon blended 15% with 85% cotton. I am interested in learning how some of the other mills on the same type of fabric make these mixes."

S. M.

Alabama.

(The item on this page in June as to the twenty-four articles carried during the past three years on Spun Rayon brought in many requests for the articles or record of when these were carried. Many of the articles are not available, but a full record of when these comments appeared is available to any readers who have their back copies and who wish to review this subject.)

From Another Grimshaw

"We just had a great laugh here in the office while reading the true to life (in some cases) article called "I Never Did See The Old Buzzard". It seems that it was quite a coincidence that I had just finished up some lectures in which I stressed the point that the students should always meet as many of the salesmen as possible.

I had pointed out that they visited many mills and picked up much good information that they were willing to pass along to their friends. Also, told the boys that the salesmen were human and should not be kept waiting. In fact, I give such lectures to each class. We also have many of the men of the road talk to the boys about their products.

Then along came the article calling a man named "Grimshaw" the old buzzard, because he was just the opposite of the type of man that I had tried to make the boys believe that I was myself. Please tell the author that I would like to have him drop in anytime and call on a fellow named *Grimshaw* who keeps his door open at all times."

ALBERT H. GRIMSHAW
M. S., F. A. I. C.

N. C. State College, Raleigh.

◆

Pepperell Dragon on Duty Night and Day at Opelika, Alabama Plant.

Typical of good textile mill signs is that shown in the above snapshots taken of the sign atop the Pepperell Mfg. Company plant at Opelika, Alabama. Tying-in with the trade mark used in its national advertising, this progressive manufacturer has an electric sign featuring the dragon and identifying Pepperell fabrics to the community and passers-by.

Pepperell is one of the foremost advertisers in the textile industry and its sheets, blankets, and prints occupy space regularly in national publications. According to Davison's 1938 Directory, the company is capitalized at $10,000,000, and has over 8,000 employees in its plants at Biddeford, Me.; Lindale, Ga.; Opelika, Ala.; Fall River, Mass.; and the Lewiston Bleachery, Lewiston, Me. The company maintains its own selling organization, selling a wide range of fabrics including sheetings, blankets, flannels, denims, chambrays, drills, twills, fine goods, shirtings, dress goods, sateens, etc.

First Description of Dallas Spinning in September "Cotton"

The industry has been hearing recently of a brand-new type of spinning frame being installed at The Dallas Mfg. Company, Huntsville, Ala., which embraces a number of novel and up-to-date features. As an example, it is the first substantial installation, in this country, utilizing the principle of using paper tubes instead of wooden bobbins, in connection with the sleeve spindle.

Such equipment depicts the progress being made by the industry, and changes occurring in its methods. We are glad to note, and to announce, that the first article describing this new spinning frame, and its several features in detail, will appear in a special section devoted to it in the September issue of "Cotton (Serving the Textile Industries)".

◆

Quality Control for Finishing Plant

"Will you please send to the attention of Mr. W. H. Grier, Superintendent, Rock Hill Printing & Finishing Co., 10 reprint copies of your bulletin 'Quality Control' billing same to Rock Hill Printing and Finishing Co., Rock Hill, South Carolina."

H. P. CONNALLY

Rock Hill Printing & Finishing Co.
Rock Hill, South Carolina.

◆

Hosiery Mills Want to Save Money

"An article appearing on Page 124 of your current issue by contributor No. 6606, 'Every Unnecessary Step Costs Us Money', is very interesting and I should like to give everyone of our members an opportunity to read it. I shall appreciate it, therefore, if you will have 300 reprints made of this article . . . "

T. R. DURHAM

Southern Hosiery Manufacturers Assn.
Charlotte, N. C.

◆

Hosiery Mill Wants "Good Foremanship"

"Please send me the pamphlet on foremanship mentioned in the May issue of COTTON."

FRED E. DAVIS

Chester Pure Silk Hosiery Co.,
Chester, Illinois.

◆

Garnetts and Cotton Waste Machinery

"We are wondering if you have among your books one covering garnetts and other cotton waste machinery. We would also like to know if the book you list as 'Condensers' can be applied to all garnetts.

"We would also like to know if you would be kind enough to send us a list of any books you may have on the operation of garnetts and the automatic feeding units for same."

W. JOSEPH HOSIER

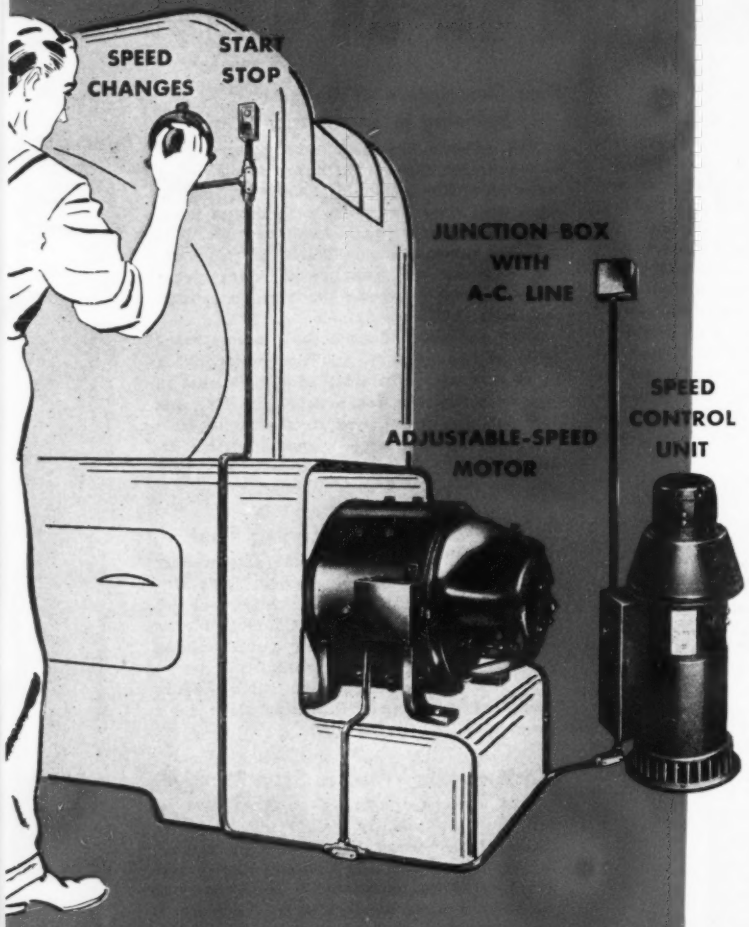
National Automotive Fibres, Inc.
Oakland, California.

(Any cotton waste machinery and garnett manufacturers having further information for Mr. Hosier may forward it direct to him.)

RELIANCE V*S DRIVE

AN ALL-ELECTRIC ADJUSTABLE-SPEED DRIVE FOR ALTERNATING-CURRENT CIRCUITS . . .

Now makes available in economical form for sizes 1 to 15 hp. a proven principle of speed control long used for large units



You can do these things with this new Reliance Drive: (1) Apply power where you want it without intervening speed-changing devices . . . (2) Control speeds at any point to which a wire can be run, and do it from a speed changer no bigger than a pie plate . . . (3) Control starting and stopping from a small push-button station placed within easy reach.

Besides the advantages of wide speed ranges (12 to 1) and remote control you get other important features such as quick stopping, speed setting, safe speeds for threading and inching, ample starting torque for all conditions. All these are made possible at a lower price by the "packaged" V*S Speed Control Unit which is connected by three wires to the 3-phase a-c. power circuit. Of vertical construction, it takes little space and can be mounted anywhere.

Reliance Electric & Engineering Company
1085 IVANHOE ROAD CLEVELAND, OHIO

Birmingham, Boston, Buffalo, Chicago, Cincinnati, Detroit, Greenville (S. C.), Los Angeles, New York, Philadelphia, Pittsburgh, Portland (Ore.), St. Louis, San Francisco, Syracuse (N. Y.) and other principal cities.

DESIGNERS . . . Please take note

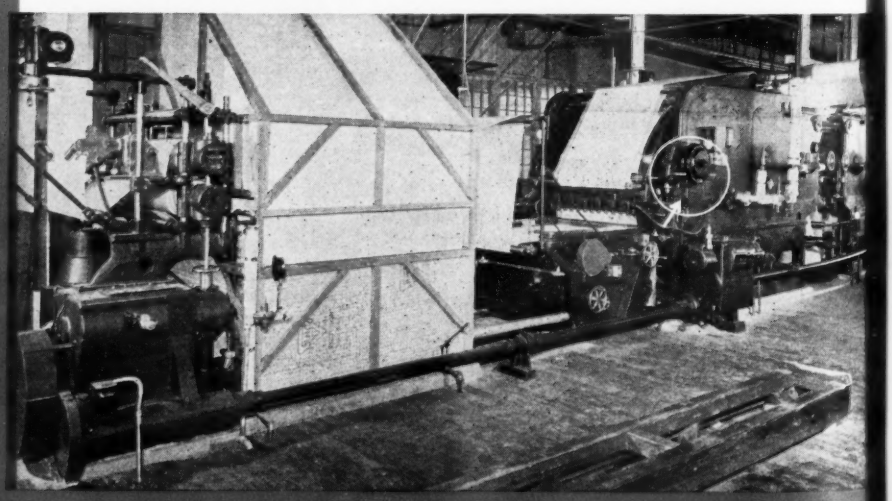
This new drive will help in "streamlining" your equipment by giving a direct, positive connection from the adjustable-speed motor to the machine. Speed adjuster and push-button take so little space that they can be grouped with other control handles for easy operation.

★ ★ ★

Produced by men who have specialized in adjustable-speed motor-drives for 34 years.

★ ★ ★

Get Bulletin 307 for details of the many desirable characteristics of this new drive.



Morrison Sanforizer equipped with a Reliance V*S Drive (7½ hp. 2200-218 rpm.). This application emphasizes the ease of providing for remote control of starting, stopping and speed changing. Push-button and speed adjuster are indicated by arrow; speed control unit and adjustable-speed motor are at the entry end of the machine on the left.

RELIANCE A-C D-C MOTORS

COTTON
SERVING THE
Textile Industries

August, 1939 Vol. 103 No. 8

Modern Air Conditioning Features Uniform Humidity and Cooling

• Almost every mill man recalls vividly the days when humidification engineers advocated "keeping the windows closed" (in other words, no ventilation), and in fact drew up their contract guarantees of maintaining a humidity condition contingent upon windows, doors and transoms being kept closed.

But all things change, and now we have them advocating "plenty" of ventilation—for well-defined reasons consistent with present-day mill requirements. The new practice requires improved methods in humidifying, ventilating, and automatic regulation. Therein lies a story, one which is told here in interesting fashion and which will bring you up-to-date on the much-discussed and highly-important subject of air conditioning.

By Robert H. Brown

Research Engineer, Parks-Cramer Company

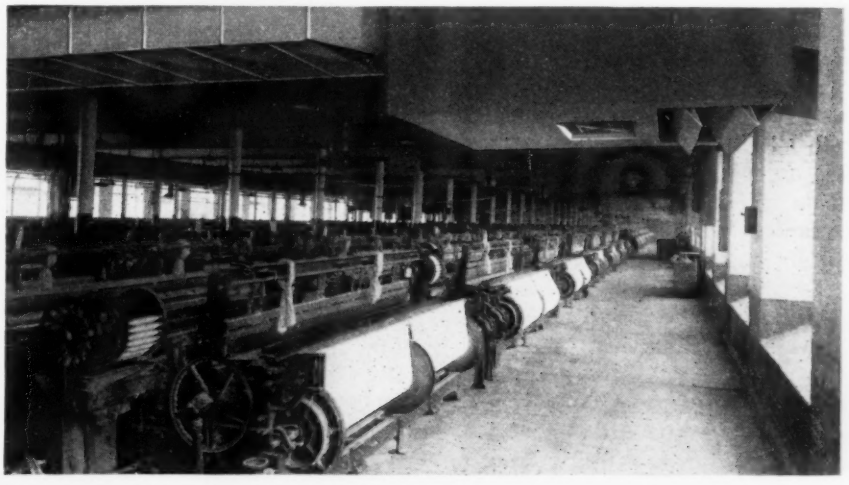
ALL MILL MEN know the importance of air conditioning in the manufacture of yarns and fabrics, but only those who deal daily with its problems are fully aware of the strides made in recent years and the savings possible by adoption of improved air conditioning equipment.

Proper air conditioning prevents static. High speed processing cannot cope with static electricity. Fibers require extraordinary pliability and sufficient friction between them to assist in compact interlocking during spinning. Proper air conditioning reduces waste by keeping the yarn compact and strong, increases production by reducing the ends down, by permitting increased roll speeds and loom speeds, and by minimizing the need for frequent adjustments. It also provides the means of securing moisture regain in the finished yarn and cloth.

Fortunately, the same air conditioning equipment that improves production and quality also improves comfort for the operatives. This is one of the most important facts about present-day air conditioning. It utilizes the cooling effect of evaporation and makes spinning and weave rooms more comfortable during the hot days of summer. Even when humidity carried indoors is higher than outdoors, the lower temperature and positive air circulation indoors makes "effective temperature" as low or lower than outdoors, provided humidification and air change are adequate and balanced.

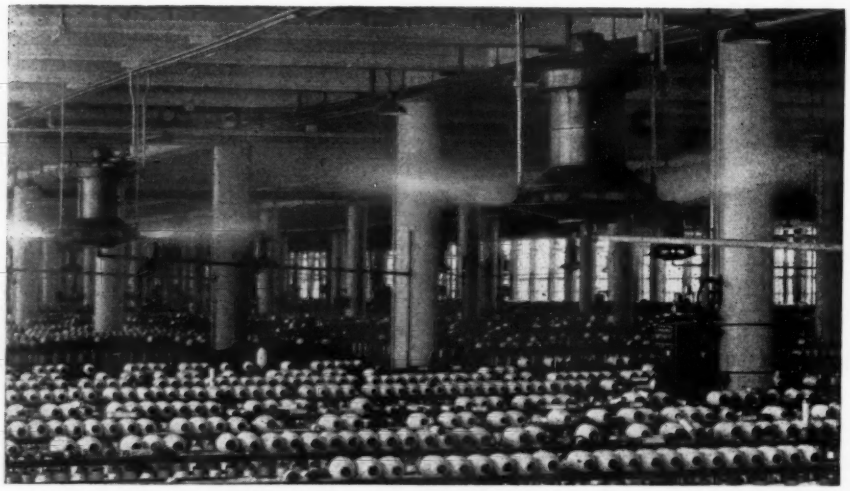
When cotton is exposed on the surface of the roving bobbin and as it travels slowly between creel and spindle, it tends to absorb (or give up) moisture corresponding to the humidity and temperature of the surrounding air. Since the spinning process imparts the final draft and twist to the yarn, it is important that moisture content at this stage be most favorable to absolutely even drafting, to development of that peculiar clinging tendency of the fibers which enables the twist to pack them together closely, evenly and smoothly.

During the actual spinning and



Photographs, courtesy Parks-Cramer Company

Improved air conditioning apparatus can be installed to supplement existing humidifying equipment in all departments where constant, uniform humidity and increased cooling are desired . . . . . .



Adequate humidification in cotton spinning is essential to best production and quality. These high duty humidifiers are controlled in two steps—to suit the demand for moisture . . . .

while taking the twist, the yarn is being whirled rapidly about by the spindle and traveler. It is important, therefore, that any difference in temperature and humidity here as compared with the rest of the room be allowed for when deciding what room humidity should be maintained. For humidity of 60 per cent in the room may mean only 55 or 50 per cent at the spindle. At best, such differences cannot be fully allowed for if they vary at different times and at different frames.

For this reason, a type of air conditioning which keeps to a minimum all irregularities in different parts of the room and especially irregularities over and around frame surfaces is far better than a system which fails to prevent these irregularities.

The accompanying Illustration A shows vividly the effect of too dry an atmosphere as compared with a relatively humid atmosphere upon the quality of cotton yarn. Both strands are the same number and were spun at the same temperature with all conditions similarly favorable except humidity. The experiments which resulted in these photographs indicated a steady improvement in quality following increases in relative humidity up to 65 per cent.

The best humidity for the spinning room depends on many factors, including staple, yarn number, twist, quality and condition of roving, design of spinning frames, draft, rolls, travelers, and other details. Ordinarily the best level is found somewhere between 50 and 65 per cent.

Humidity in weave rooms should be considerably higher; somewhere between 70 and 85 per cent is customary, depending upon circumstances.

When the best humidity is determined the essential thing is to maintain it closely and uniformly throughout the room. This is the prime purpose of modern air conditioning.

In both spinning and weaving,

Illustration A: Strength and appearance are improved by compact interlocking of cotton fibers during spinning .

temperature should be maintained at not less than 75 to 80 degrees F. during cold weather. The upper limit during hot weather is not so clearly defined. It should be kept within bounds with wide variations avoided. Adequate air conditioning will prevent undue excesses at all times, winter and summer.

Improved trends in cotton manufacturing during the last decade have featured greater concentration of machinery and therefore of heat sources. Higher speeds require more power, which means more heat liberated at the motors and the machine surfaces. Neutralizing this heat is one of the problems which air conditioning is required to solve. For heat raises temperature. Increasing temperature reduces relative humidity, requiring more humidification.

Fortunately, humidification does more than add moisture to the air. It cools as well. When water is sprayed into the air, the heat required for evaporation is taken from the air, making the air cooler. The evaporation of a single gallon of water lowers temperature of the surrounding air as much as the melting of 60 pounds of ice. But this is not a complete solution of the problem, because just as soon as proper humidity is reached, humidification must cease, and humidifiers cool only while they are running.

Air change is necessary. When it is achieved by opening windows or transoms, another difficulty—lack of uniformity—develops. Conditions are irregular in different parts of the room. Manual adjustment of ventilation also brings another difficulty: that of changing weather conditions. If too much hot air is admitted, relative humidity will drop and temperature will rise with a sacrifice in both production and quality.

Proper air conditioning must provide the means of introducing enough fresh outdoor air to allow humidifiers to keep running in hot, dry weather. It should prevent excessive ventilation. It should distribute air into the interior of the hot room, maintaining the same improvement there as near the outside walls. In other words, it must overcome the handicaps of dimensions and layout of machinery as well as weather variations and extremes.

Let's consider a little further the question of cooling capacity of a combined system of humidification and air change. The drier the outdoor air is, the more moisture it

can absorb and consequently the more it can be cooled.

But on a hot humid day, indoor cooling is no less needed than on a hot dry day and in order to make up for the lessened capacity of the incoming air to absorb moisture, more air must be introduced. On a humid day, when the permissible evaporation per cubic foot is low, the volume of incoming air must be high. On a dry day, when the necessary evaporation is high, less volume of incoming air is needed for the same cooling.

Viewed in this way, the problem is reduced to simple terms. By providing for adequate quantity of both air change and evaporative capacity as needed, the desired indoor humidity can be maintained and at the same time the room temperature kept down to reasonable levels.

Is an air conditioning system of this kind limited in its capacity to cool? Certainly. This fact must not be overlooked. But the combination of humidifying and air changing system properly designed and properly regulated satisfies the rigid requirements of the present-day mill. Nothing short of mechanical refrigeration or use of ice could do more.

We are all familiar with "dry bulb" and "wet bulb" temperatures, from the use of sling psychrometers and stationary hygrometers. When we get into air conditioning the importance of wet bulb temperature becomes apparent for it is a measure of the heat in air. It is one of the important factors in air conditioning calculations and specifications.

"Effective temperature" is another and equally important term. It is an index of warmth felt by human beings. It is a combined indication of temperature, humidity and air movement. It is approximately half way between the wet and dry bulb temperatures.

A reasonable goal for air conditioning a spinning or weave room is to maintain the same, or slightly lower, *effective temperature* inside as exists outdoors, during extreme hot weather.

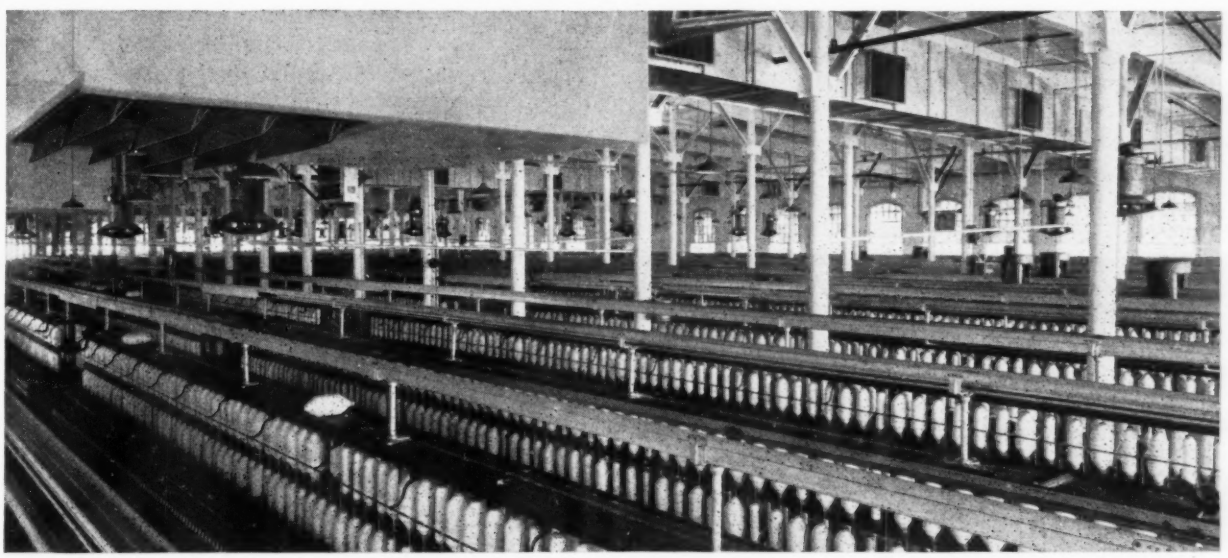
By humidification and its evaporative cooling, indoor dry bulb temperature may be reduced until the desired increase in relative humidity is reached. If air change is adequate but not excessive, the result is correct indoor humidity, wet bulb temperature only slightly above outdoors, and the lowest effective temperature which evaporation cooling can produce.

A typical example will illustrate the foregoing. Suppose the outdoor dry bulb thermometer reads 95 degrees F. with wet bulb thermometer 75 degrees, a relative humidity of 39 per cent and 83 effective temperature. The wet bulb temperature in the spinning room could not be less than 75 degrees. On account of internal heat it would actually be higher. But with adequate air change, it might be kept down to about 78 degrees. Humidifying to 65 per cent relative humidity would then reduce the spinning room temperature to 89 degrees or 6 degrees below outdoors and with the same effective temperature as outdoors (83).

If outdoor dry bulb temperature had been 100 degrees instead of 95 degrees, but wet bulb temperature the same, 75 degrees (relative humidity 31 per cent, effective temperature 84) the same indoor temperature of 89 degrees could be maintained, which in this case would be 11 degrees below outdoors and a lower effective temperature (83) would exist indoors than out.

In the latter case, a weave room operating at 80 per cent humidity could easily be cooled to 85 degrees, or 15 degrees below outdoors—effective temperature 82 degrees, or 2 degrees below outdoors.

A system of air conditioning which maintains desired indoor humidity and at the same time greatest possible cooling—which accomplishes all of this positively, automatically, regardless of changes of indoor heat, outdoor weather conditions, sun and wind effects, which distributes indoor heat and moisture so that conditions are uniform in all parts of the room—and which occasions a minimum of fuss and bother to keep it operating properly and accurately, is a system which provides *real* air conditioning for the modern cotton mill.



The automatic airchanger draws in outdoor air, or recirculates indoor air, or both, to keep indoor humidity always at the desired point and to cool the room as much as possible by evaporation from the humidifiers. Both the humidifiers and airchangers are controlled automatically . . . . . .

What One Salesman Thinks of His Job

HERE an earnest salesman analyzes his job and his place in the picture, and gives all of us something to think about. He has given the subject serious thought, and draws and expresses some rather sober and intimate conclusions, and this point of view sets his discussion apart from the more humorous treatments we have recently published, to which he refers.

The intimate nature of his thoughts obviously precludes the use of his name, but his comments clearly demonstrate what the editors know: that he is a serious, straightforward, successful salesman of commodities purchased by southern textile mills.

IN RECENT issues of COTTON complementary (not complimentary) articles written by mill men and by salesmen have appeared*. These articles have not had as their subjects the matters about which the authors should know the most, namely, their own work. With that queer and soothing-to-ourselves quirk that all of us have of regarding the other fellow more carefully and critically than ourselves, those articles have revealed the mill man's view of the salesman, and vice versa.

Those articles have their place, for a dissertation published anonymously permits the driving home of points that have considerable value to the author's—shall I say victim? All of us need to know what our fellow man expects of us, what he likes and dislikes, and many embarrassing moments will probably be avoided by our taking to heart the advice, which was cloaked in humor at times, contained in the articles referred to.

But it seems to me those articles have missed a large part of the fundamentals of the question: "Why be a salesman?" The biblical advice, "Know thyself," appeals to me as of such importance in this discussion that if you will bear with me briefly we may get a somewhat different viewpoint on the vocation of selling. Obviously, this exposition refers only to selling products and equipment to textile plants.

The most important and most searching light under which any calling, vocation, profession or what-you-will must be inspected is this: Does it render a real service? This refers to service in its broadest meaning. If service isn't rendered, then the job isn't worth doing. I say the salesman serves humanity. He makes the contacts between the producer and the consumer, and he is continually passing back to the producer the information that enables the producer to improve the quality of the product.

Perhaps it is necessary that an entirely different article or device be developed; the salesman has learned of the need and perhaps even suggests ways in which the new article might be made to serve the changed conditions best. The result is more efficient operating methods in the industry, resulting in lowered production costs and subsequent increased ability of the public to use and enjoy the textile commodity thus created. Salesmen today are engineers as well, and they can render real service to their clients as well as to their employers. Doubtless many improvements in the quality of textile yarns and fabrics, and many cost-reducing methods in the textile industry have resulted from the constant burrowing of salesmen into the problems involved.

So, in answer to the question: "Why be a salesman?" I say the salesman renders a real service and the opportunities for broadening the scope of that service are innumerable.

There are two big thrills in a salesman's work. The first is that of making a sale to a plant where his article will do the work as well or better than the article that has been used. There is no reason for me to minimize the importance of this phase of the salesman's work, for his existence depends upon his making sales and to be honest I have put this as the first big thrill. But there is another which runs the first a close second. When a mill man says to a salesman, "Mr. ———, I should like to have your advice on this subject," then the salesman experiences a glow that you can't understand if you've never known it. Perhaps the problem is entirely unrelated to the product the salesman is offering; that doesn't matter. The realization that the customer has enough confidence in him to ask his advice is the important thing. And many a mill is running more efficiently today because of some salesman's advice being taken.

Don't get the impression that I am saying the salesmen are responsible for the successful operation of the mills. Far from it. The work done by the mill men in their own plants is far greater in volume and higher in quality, so far as their problems are concerned, than any salesman could hope to accomplish for any individual mill. But to illustrate the point: Recently a salesman called at a mill that was having trouble meeting a certain specification. It took the salesman about two minutes, when given the privilege of analyzing the specification, to suggest a way of meeting it. The mill tried the suggestion, with the result that an outlet that had been closed to this mill's goods was reopened—and the mill was able to lower the grade and staple of the cotton used in that construction. Believe it or not.

The back-slapping days of selling are behind us. To those who have gone before us and have founded the great textile industry

(Continued on page 97.)

*The reference here is to three articles. Two of these, in which a mill buyer paid his respects to salesmen, and a salesman, calling on mills likewise criticized the bad habits of mill buyers, appeared on pages 92 and 93 of April COTTON. The third told of the experiences of a salesman, back in the Great Stuffed Shirt Era, in unsuccessfully trying to get an interview with a smug mill treasurer. Further discussion of the buyer-salesman relationship will be welcome.

The Polishing and Glazing of YARNS and TWINES

By W. I. Finnetney

POLISHING or glazing in its broadest sense is the term applied to the process of finishing yarn and twine for the purpose of improving its appearance and utility. Were it not for this process, many of the uses to which these products are now put would not exist due to the fact that unpolished yarn and twine would not meet the requirements for strength and smoothness. It naturally follows also that the large variety of uses to which they are put calls for a large variety of finishes.

In order to understand the process, it is best to classify these products into several broad groups as these are generally observed by the manufacturers themselves. A mill making threads, for instance, would hardly be making twines also because the yarn counts used on one product would not be suitable for the other. The polishing equipment also would be different. In this article we shall consider two groups, threads and twines.

Thread Polishing

Threads would be the term used to apply to twisted yarns made in ply form from 20s upward, including the finest numbers spun on ring frames today; some of which are two, three, four, five and six ply in the fine range of regular spool cotton for domestic use. These are put up on tubes for the dress and garment industry, for overalls and men's work clothes. Various sizes of tubes are used depending, of course, upon the size of the threads.

Yarns for sewing threads are generally spun with reverse twist and good long staple cotton is used, depending of course upon the use to which the thread will be put. Some Egyptian cotton is also used.

Bleaching and dyeing must be done before the polishing of these threads and this is done in the way that best suits the product. It must be carefully done so that there is no tendering of the fibers, and subsequent winding must not chafe the yarn. Finally the yarn should be delivered to the polishing department wound on tubes of proper size and as free from knots as it is possible to make them. Such knots as are accumulated in the preparatory processes as well as in the polishing must be subsequently removed.

There are several types of polishing machines and it is important that the correct type be chosen for the particular kind of work that is to be done.

For cotton thread polishing, the two brush machines will process any of the finer numbers made today. These machines have a wide range of flexibility and adjustments may be made in the brushes and rolls so that almost any desired thread finish may be obtained.

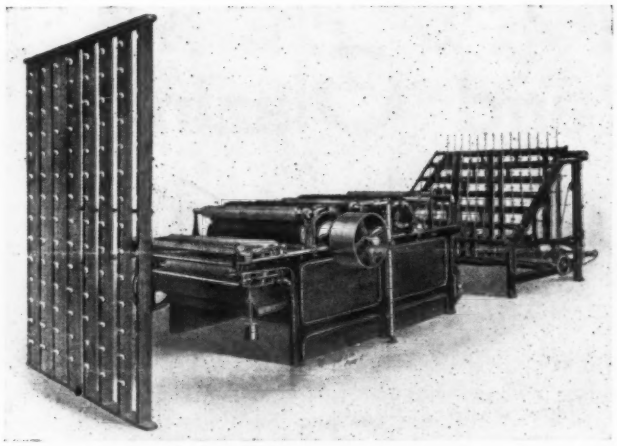
A complete two brush machine consists of a creel which will hold 98 tubes of suitable traverse and up to about 4-inch in diameter. There is some variation in the construction of creels on machines of different makes, but they are generally located so as to provide greatest convenience to the operator. Ends are drawn from the creel to a wooden guide bar which is equipped with metal or porcelain guides and a traverse motion which traverses the ends and prevents the grooving or creasing of the flannel roller in the size box. On some machines it is possible to bring the ends back through the size box a second time so as to obtain a more suitable finish.

The size rolls are about 6 inches in diameter and are made of iron pipe. They should first be painted with white lead and the heads securely caulked so that the roll may be protected from rust. They are then built up with duck or burlap to about 7-inch diameter and finally covered with flannel of a good quality. These flannels may be made of about 5 yards of closely woven light material which is lapped around the rolls or a circumference of heavy flannel which has a butted-and-sewed joint to prevent lap marks from showing on the threads. Soapstone rolls are sometimes used.

Guide rollers are placed at different points so that the threads may be guided through the machine and to the take-up. These are made of brass and one should be grooved so as to keep the ends separate. The grooved roller should have one or more extra grooves so that the operator can shift the ends in cleaning. One roll has a slot cut from end to end so that laps caused by broken ends may be conveniently cut.

The brushes are arranged so that the friction of the bristles against the twine spreads and polishes the coating that has been applied. These are adjustable so that the desired amount of friction may be obtained and the guide rollers support the ends and guide them for the greatest amount of contact with the brushes. These are made of a good grade of bristle which is mounted in slats and which may be renewed when they become worn. They should be kept in first-class condition at all times.

For drying there is usually a small brass or copper cylinder around which the threads are wrapped. This may be either stationary or revolving and live



The two-brush dresser

steam is passed through it to dry the ends as they come in contact with its surface.

The take-up is sometimes an integral part of the machine or it may be separate. If it is an integral part of the machine the spindles are driven by bevel gears and there is a friction plate on which the spools rest. The friction between the head of the spool and this plate keeps the ends winding at an even tension. The spindles in the take-up are arranged in rows and there is an adjustable traverse bar, equipped with guides, which directs the ends as they are being wound.

The speed of the brushes is constant but through a series of step pulleys the feed may be adjusted to the rate best suited to the thread size and type of finish being applied.

The starches of corn and potato and many gums comprise a large part of the mixes used for polishing threads. Cocoanut oil is a good softener and adds luster to nearly all colors, and many waxes are also good softeners. The ingredients used in making the mixes and the proportions of each is dependent on the type of finish desired. However, it should be said that this is perhaps the most important part of polishing and should receive the careful attention of someone who is well equipped by reason of his experience to develop suitable formulae. Cooking equipment is needed that will mix the ingredients well and prevent lack of uniformity in preparation.

The polishing of threads is a highly specialized process. To attempt it with limited and inadequate equipment or without a careful study of the problem as has been described might conceivably result in losses of considerable proportions.

Twine Polishing

Polished twines, as they are commercially known, have been standardized by the manufacturers as to yarn numbers and plies and as to feet per pound. The two general classifications used in the simplified practice code are known as "Coarse Yarn Polished Twines", and "Fine Yarn Polished Twines".

Coarse yarn polished twines are made from about 2s yarn. The finished weight of a 3-ply or No. 18 twine would give an average of 1,575 feet per pound. This is the smallest of this group of twines and there would be intermediate sizes up to a No. 8 which would be made of about 18-ply and would finish with a yardage of about 250 feet per pound.

There are four standard colors, tan, dark brown, green and gray; and white. These colors are generally standardized by each manufacturer but there are variations between the colors of different manufacturers.

Polished twines are wound in various forms according to the needs of the users, which include balls, single end tubes of different traverse lengths and diameters, single end reels of 10- 25- and 50-pound weights, and many-end reels of 25- and 50-pound weight.

They are twisted on tube twisters and each manufacturer takes great care to obtain the greatest smoothness of twist; and since so much special twisting and winding equipment is required that is not to be found in mills having only conventional equipment, there is not much encroachment from other mills.

Some of the specialties which polished twine manufacturers make include broom twine, tufting twine and tag twine. These are made according to the requirements of the users of these products and are not included in the standard classifications for commercial polished twines.

The foregoing outline of twines has been given to show the great flexibility of equipment that is required for its manufacture. The polishing machinery must be capable of handling any and all sizes and it can be readily understood that machinery used for thread glazing would not be suitable for twines. Two types of machines may be used and these are so entirely different in construction that each must be described separately.

The most common of these machines is of English origin and is usually made to handle 36 ends. These are drawn from a creel which is usually made to suit the particular mill and the twine is drawn down through the size box so that it is thoroughly immersed. Sometimes two and three boxes are used and the mixture in the first is thinned down so as to penetrate the twine. Colors are obtained by putting the dye in the polishing mixture which has given rise to the term, surface dyeing. After passing through the mixtures the twine comes in contact with rollers about 12-inch in diameter which are used to spread the coating uniformly.

The drying of the twine is accomplished by passing the strand of 36 ends around two drying cans which are mounted one over the other and revolving on a horizontal axis. They are placed at a slight angle to each other so that each time the strand passed around the cans it is advanced to the other end. These cans are not positively driven but instead the drive is applied to the bottom can only and the tension on the twine causes the top can to revolve. Each time the twine passes around the cans it is advanced about two inches or a total of about 36 times before it is completely dried.

The friction for polishing is obtained by placing

(Continued on page 66.)

Practical Methods of Running Cut Staple Rayon Fiber

Article I—A Description of the Fibers

THIS begins a series of articles on the manufacture of yarns and fabrics from cut staple rayon. The first article points out the general properties of the synthetic fibers in such a way that the reader might acquire a sufficiently clear picture of the stock to use as a base or starter in solving his own individual problems. Subsequent articles will take up actual manufacturing problems.—The Editors.

THE CUT RAYON STAPLES are exactly what the name implies; that is, they are manufactured identically as continuous filament rayons up to a certain point, the difference being in the finishing processes at the rayon plants as to the form or shape which the finished stock assumes. The stock is cut to the desired length of staple for the customer, and is baled and shipped out in bulk form similar to cotton. The majority of the cut staple fiber being supplied to cotton mills is from 1½-inch to 1⅞-inch in length. Where the yarn being spun is to be a mixture of synthetic and natural fibers the rayon is cut in length to conform to the natural fiber because the mixture processes better with staples of uniform length.

In a general way, the cut rayon staples are what we might consider to be a modern addition or offspring of the already existing many types of continuous filament rayon yarns. Whatever our opinion may be, optimistic or otherwise, the fact remains that they are here to stay. There is a definite place in men's and women's clothing, domestic and commercial cloths, that has heretofore not been filled by any other fiber quite as well as it has by the various types of spun rayon and spun rayon with natural fiber mixtures. Fabrics made from these fibers have that certain pleasing feel, drape, general appearance and wearing qualities not previously obtained from cotton, wool, flax, or continuous filament rayons.

The weaving and spinning of cut staple rayon today has certain limitations that have not been overcome, and are not likely to be in the near future. For this reason our staple fabrics that have been developed over a period of centuries will not be replaced. We need not worry about the future of King Cotton or Mary's proverbial Little Lamb.

Properties of Rayon Staple

In discussing the problems of handling cut rayon staple on cotton mill machinery it is logical that we first try to get a clear picture of the character of the stock to be drafted and spun into yarn. The luster of rayon is one of its main attractions in the finished fabric. This characteristic is due to the smoothness of the fiber itself, and this degree of brilliancy or luster can be controlled to get the desired result by adding a dulling agent at the rayon plant to the spinning solution before it is forced through the spinneret. The dulling agent may be a mineral oil or an inorganic pigment. This dullness or luster is permanent and cannot be changed without destroying or abrasing the rayon fiber itself. This degree of luster is classified by the rayon manufacturers as Bright, Semi-dull, and Dull.

All textile fibers must have certain properties requisite for satisfactory spinning, weaving, finishing, and wearing qualities; staple rayons are no exception to the general requirements. The required properties should be considered separately and collectively as tensile strength, length, fineness, uniformity of staple, cohesiveness, pliability, and elasticity; electrical properties; hygroscopic nature and affinity for dyes or finishing agents; durability.

Probably the most important requisite for a textile fiber is tensile strength, for if the individual fiber does not possess within itself considerable strength it will not be possible to make from it a yarn suitable to withstand the strain of weaving; also, the durability or resistance to wear of the finished garment is primarily dependent on this quality together with other properties. Rayon staple is being made in both viscose and acetate in a wide range of deniers. The tensile strength of the various staples of course vary according to the denier. Viscose staple has plenty of room for improvement along this line. Rayon manufacturers have made a great amount of research in conjunction with various mills during this past year and state that a great amount of improvement has been made in the tensile strength of viscose cut staple as well as the continuous filament yarns. The commercial viscose staple available both foreign and domestic in the past and present is brittle when too dry and becomes sticky and loses its strength when subjected to excess humidity. Acetate staple on the other hand seems to be very satisfactory in this respect; and in

fact, appears to have too much resistance to water.

All rayon staples are cut to a certain length and there is very little variation in the length of the individual fibers. Rayon differs greatly from cotton in this manner; that is, cotton fibers in the average American Peeler type run from about ¼-inch up to about 1¼-inch in length on 1⅛-inch staple. We can readily see where a yarn is to be made up of a large number of fibers twisted together that the strength will be directly proportional to the length of the individual fibers. For this reason all rayon staple is cut as long as possible to be practical for carding and spinning equipment. Some mills have certain types of equipment that prohibit the rolls from being opened sufficiently for the staple, however where this condition is not present better running work would be obtained by running full 1⅞-inch staple.

Length of Staple to Process

Some few mills have attempted to save the expense of changing machinery settings throughout carding and spinning by running a rayon staple the same length as the cotton they were using. This proved to be a costly mistake because the strength and the weaving qualities of the yarns were seriously affected. On the other hand it is not practical to go too high in the length of the staple. It is easy to handle long fibers on the woolen system, however the cotton carding machine is so constructed that to run real long staples only a low production is possible on the card due to necessary low speeds, and even then the stock is likely to be damaged. It was possible to card the long staple Sea Island cottons years ago by experimenting with speeds and card settings, but the rayon fiber does not possess the strength and toughness of cotton; consequently it is necessary to watch every process throughout carding and spinning to see that the stock is not damaged. There is not a single machine in carding or spinning that does not need special attention for speeds, roll settings, or roll weights. As previously mentioned, the luster of rayon is one of its main attractions, on the other hand this one property of rayon can cause a mill man more grief and regret than any other one thing in regard to cut rayon staple. The luster of any fabric primarily depends on how it absorbs or reflects light. If a warp end or a bobbin of filling has become abrased or is spun from damaged staple it has a chafed or fuzzy appearance which is not likely to appear in the greige goods, but will be very noticeable in the finished goods. All spun rayons are very sensitive to this one trouble; in fact, should a change be made in the drafting layout in carding and spinning from short to long draft, or vice versa, it is very important that these two lots of yarns be segregated and not allowed to be mixed in the same fabric.

The weight or size of all rayon cut staple fibers is regulated and classified by the rayon manufacturers. This size being expressed in the denier system; that is, one filament or fiber 4,465,000 yards in length weighing one pound is equal to one-denier. Thus a pound of 5 denier rayon would be 893,000 yards in length, and a pound of 10 denier rayon would be 446,500 yards in length. Therefore, the diameters of the different denier rayons vary according to the cross-section area and are not directly proportional to the variation of the deniers. Thus a 3 denier rayon does not have twice the diameter of a 1½ denier fiber, but is only about 1.60 times larger in diameter. Due to the difference in density or specific gravity of the different types a 3 denier acetate fiber would be about 20 per cent larger in cross-section area or about 5 per cent larger in diameter than a viscose fiber of the same denier. This being due to the fact that acetate has a specific gravity of 1.25 and viscose rayon 1.50.

The fineness of the fibers or denier of rayon is more or less determined by the size of the yarn to be spun and the desired effect or characteristic of the finished fabric. Other things being equal, the finer the staple of the fiber, the finer the yarn which can be produced from it. The smallest diameter fiber available in cut rayons until very recently was 1½ denier staple. Consequently it was not practical for any mill to spin a warp yarn for weaving finer than 40s cotton count. Even this count was not practical in many mills. Rayon manufacturers have recently developed a 1¼ denier viscose staple which they claim can be spun into number 120s cotton count, this being for filling yarn. This would mean that a number 50s or 60s warp yarn could be handled successfully, however this has not yet been proved on a commercial production basis.

The majority of viscose staple used has been 1½ denier, both bright and dull, the reasons being that the finer deniers are easier to handle on all carding and spinning machinery, and make a wider range of yarn numbers and fabrics available from the same card room stock. As previously mentioned, it is possible to make a 40s single warp yarn from 1½ denier viscose staple, but should the stock be changed to 3 denier the finest count that could prove practical would be a 30s single warp yarn for weaving. Of course with a ply yarn of all rayon, or a ply yarn composed of one end of rayon and one end of cotton or high grade flax, exceptions could be made. In men's suitings and women's dress goods the tendency of late has been towards a fabric that is not "boardy" and has a full appearance with a more woolly hand. 3 denier and 5 denier bright viscose rayons have been used for these effects, in some cases separately, and others where a finer yarn was needed a mixture of 1½ denier, 3 denier, and 5 denier stock was blended in such a way as to get the desired effect and yet make a yarn practical for weaving.

Rayon Staple is Not Cohesive

A very important quality for a textile fiber is cohesiveness. By this is meant the property of the individual fibers cohering or holding on to one another when spun into a yarn. This is accomplished by the surface of the fibers possessing frictional resistance to each other and to the carding and spinning drafting rolls. For example, the surface of wool is very rough due to the edges of the epidermal scales similar to the scales of a fish. These scales catch in each other and offer a great amount of frictional resistance to being pulled apart. The cotton fiber, also, possesses an irregular surface and has many twists in the fibers which interlock when several fibers are put together. This characteristic of wool and cotton makes the draft-

ing processes easier by presenting a rough or uneven surface to the drafting rolls which prevents the rolls slipping excessively and irregularly on the stock. The tendency of the stock to cling together also is a great asset in the drafting process as a constant frictional or clinging property prevents the drafting rolls from pulling the stock apart in lumps or bunches thereby preventing an uneven roving or yarn.

All cut viscose rayon staples are sadly lacking in cohesive properties; whether the fibers be bright, semi-dull, or dull the fibers still retain their smoothness. Under the microscope the fibers appear as straight, smooth, and transparent glass rods. Acetate staples are somewhat better in this respect as the manufacturers have been able to introduce a great number of crimps per inch in the individual fibers. Incidentally, these crimps were not put in the acetate fibers to assist in the carding and spinning processes, but rather to give the stock some of the characteristics of wool such as curling property which enables a woolen fabric to contract to its original shape after being stretched. To obtain the crisp feel of wool cloths acetate stock is mostly used in the coarse deniers, three, five, and in some cases as coarse as 20 denier stock is used in a mixture with other fibers. However, should these crimps be introduced in the viscose staples, particularly the bright staples, the desired luster would not be obtained and the fabric would have a cottony appearance. The great smoothness of rayon fibers not only makes the drafting process difficult, but causes the stock to split or fall apart all through the card room processes until it arrives at the slubber or fly frame where a small amount of twist in the roving stops the trouble. This trouble is not so apparent in handling the finer deniers as they are more pliable and stay put, however as the coarseness of the stock is increased the more the trouble appears.

Another quality which is very essential to a satisfactory textile fiber is pliability, which permits the fibers being easily wrapped around one another in the twisting operation at fly frames and spinning frames. The stiffer and more wiry the nature of a fiber the more trouble encountered. The pliability of a fiber seems to vary directly with its elasticity and power of contracting. Thus the coarser the denier of cut rayon staple the more unyielding and brittle the stock becomes and the more trouble that is to be expected in all mill operations, especially weaving. Consequently as we increase the denier of viscose and acetate stock more twist must be inserted to keep the fibers from pulling apart due to their very smooth surfaces and stiffness.

Twist in Staple Fiber Yarns

Twists are ordinarily expressed by a certain arithmetical figure for cotton yarns, being known to all cotton mill men as the twist factor or twist multiple. For average cotton yarn constructions, warp yarns use a twist factor of 3.50 to 4.50, and filling yarns from 2.75 to 3.75, depending on desired effect of cloth and strength of yarns required; also, exceptions are made between carded and combed yarns and for special fabrics. What knowledge that is acquired for determining the proper twists for cotton yarns is more or less worthless in dealing with spun rayon staples. There is no absolutely accurate way to predetermine what twists will be correct for the yarns of a certain fabric; instead research must be made by running several different twists in the yarn to be spun and from these tests a selection can be made for the most practical weaving yarn.

It is impossible to run the soft twists in spun rayon yarns of medium counts that are run in cotton yarns of equal number. On the other hand, it is also impossible to make a satisfactory all spun rayon crepe with either viscose or acetate staples. Crepe fabrics have been attempted with 1½ denier staple by a great number of mills, however the yarns proved to be too brittle and the crepe effect that was desired in the finished fabric disappeared due to the twists in the yarns becoming set and the yarns losing their power of contracting after being subjected to the finishing processes. There are numerous novelty yarn crepe fabrics being made today composed of spun rayon yarns being twisted with other yarns such as cotton, wool, and continuous filament rayons; however, it would take a great deal of time and space to list and describe all these various novelty yarns. For a 30s cotton count all spun rayon, 1½ denier stock, warp yarn the margin of twist variation is very small for practical weaving. A twist factor below 3.50 proves to be too soft and after a twist factor of 4.00 is reached the yarn becomes more and more brittle.

Reduce Static with Heat and Humidity

Being a poor conductor of electricity, rayon is easily electrified by friction. The stock can become very difficult to handle in card room processes if the air is allowed to become too cool and dry. The electrified condition of the stock under these circumstances is spoken of as static electricity, and this condition is much more prevalent with rayon than cotton. This trouble can be overcome by using a higher room temperature and increasing relative humidity. However, excess humidity makes rayon become sticky and will do more harm than good, and in most cases static electricity can be overcome by simply raising the room temperature. This problem must be worked out at each process and, of course, depends altogether on local conditions such as weight of stock, amount of draft, speeds, and type of rayon stock being run. Any suggested relative humidity might prove right for one particular mill, but all wrong for some other plant.

There is likely to be variation in the properties of a commercial chemical product no matter how scientifically and accurately the manufacturing processes are controlled, this being due to the fact that there is no absolute pure commercial basic chemical substance. Therefore, there is a great chance that separately ordered lots of cut rayon staples will have a small amount of variation in luster and affinity for dyes between the lots. As a safety precaution, it is advisable for a mill to keep each lot of rayon stock separate, and not allow the yarns from the different lots to become mixed in the same style, especially the filling yarns. It is customary for rayon staple manufacturers to advise the mills when a lot of rayon staple has a different dye index, however, as previously stated, it is not a wise plan to mix odd lots of rayon fiber even though the staple manufacturer gives the same dye

index to the different lots. No weaving mill on continuous filament rayons would dare mix the filling yarns in the same cut of cloth from different shipments of yarn, and this precaution will sooner or later save a mill a lot of money if applied to the handling of all cut staple rayons.

Such a procedure of tailing out odd lots of stock throughout the entire mill naturally increases the cost of the fabric; therefore rather than abandon this safety habit because of additional costs it would be very sane and logical to make a thorough analysis of this situation, and the system of figuring costs rectified to include this additional expense. This expense can be held to a minimum by purchasing larger lots of stock where the mill has a large amount of business booked ahead, however these instances are rare with the staple rayon trade, rather the buyers have a tendency for only "hand-to-mouth" buying, and are interested mainly in quick deliveries. Also, it is very risky to buy rayon staple stock for anticipated business due to the fact that the demands for some special fabric that a mill has developed may suddenly come to an end and some other fabric with an entirely different staple may become popular.

It is difficult to give a perfect and complete written description of all the characteristics of the various types of cut staple rayons. The purpose of this writing so far has been to point out the general properties of the synthetic fibers in such a way that the reader might acquire a sufficiently clear picture of the stock in question to use as a base or starter in solving his own individual problems. It is the writer's opinion that a great many mills have attempted spun rayon manufacture in a haphazard manner and have encountered serious troubles with consequent financial loss. There has been a great deal of advertising and claims made for the unlimited possibilities of rayon cut staples. No doubt all these possibilities will prove to be realities in the distant future, however it should be in order for the average cotton mill to deal in facts and make a fair investigation as to the possibilities of a return on money invested in an entirely new venture before taking a leap in the dark. A great many mills have run spun rayons successfully on certain fabrics, however these particular mills formerly ran filament rayons and fine goods which necessitated the employ of highly skilled workers and were not compelled to undergo a period of personnel training and adjustment in order to meet the high standard of quality required in these fabrics.

The next article will deal with the actual carding, spinning, and weaving of cut staple rayons; pointing out the important and generally accepted methods of handling machinery and stock.

Polishing and Glazing Yarn and Twine

(Continued from page 62.)

four rollers on each side of the cans, two on each side of the twine. These are adjustable so that any desired amount of friction can be secured. The surface speed of these rollers is much higher than the speed of the twine. These rollers are covered with twisted or braided rope wound spirally from end to end.

The take-up is a separate unit placed to receive the ends as they are delivered from the cans. It is made with three rows of vertical spindles which are each positively driven by beveled gears. These revolve at a speed that will always keep the ends tight when the spools on which the twine is wound are empty. The friction between the head of the spool and the plate on the spindle keeps the ends at the desired tension and it will be understood that as the bobbins are filled they will revolve at a slower rate. There is a guide rod for each row of spindles and a quick threading guide is placed on the rod for each end. These rods are traversed by a mangle wheel.

The second type of machine uses hot air to dry the twine. Steam coils are placed underneath and the twine, usually 16 or 24 ends passes above the coils as it is being polished. It is fed from the creel through two size boxes with intermediate spreading rolls between. Grooved rollers which guide it in the top plane advance the ends each time they pass around and the twine is sometimes passed through the second size box a second time after it has been around the drying section two or three times. Cast iron drums about 14 inches in diameter guide the ends in the bottom plane and these are positively driven by chains and sprockets. These are driven from the feed shaft.

There are 8 friction rollers, 4 of which are placed above and 4 below the twine in the top plane. These revolve at a high rate of speed and are adjustable so that the desired amount of friction may be secured. They are covered with twisted or braided rope wound spirally around the rollers from end to end.

These machines will handle a wide range of sizes and will produce a good finish, but they are not as flexible for a wide range of finishes as the first type of machine.

The development of a suitable size for polishing twine is an involved and complicated process. Starches, gums, softeners, waxes, together with gelatin and other ingredients must be combined in the right proportions and with the use of suitable methods of cooking in order to secure uniformly satisfactory results. The starches used are generally blends of corn, sago, tapioca and potato. Dextrines and gums are used as a binder and softeners such as tallow, cocoanut oil or stearic acid are used. Waxes may be Carnauba, Japan wax or beeswax and are used in the right proportions to produce the highest gloss. For additional whiteness pigments such as lithopone or titanium dioxide are added in small amounts.

The manufacture of polished twines is a highly specialized division of textiles and when it is considered that those who use it in largest volume often insist that nothing be used in making or finishing it that would injure the hands or that it will not effect food products with which it comes in contact; then it can be understood just how much care is required in its manufacture.

Taking Care of Anti-Friction Bearings

• *The mill man who submitted this contribution said: "This discussion is nothing but a collection of information from various anti-friction bearing manufacturers on lubrication of their equipment, condensed and written particularly for our men here at our plants. There must be some value in this paper, as it has cut down our bill for replacement bearings considerably, and some of our men have told me it was the only thing they had ever read that told them why they could grease a ball-bearing too much."*

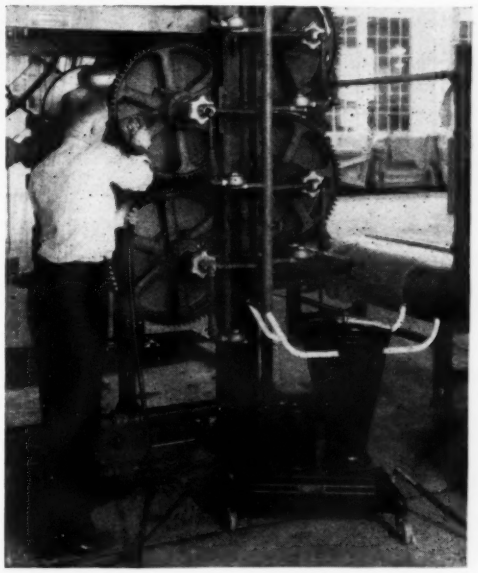
ANTI-FRICTION BEARINGS are designed to furnish a surface that will roll instead of slide. The manufacturers of such bearings are careful to see that path of the rolling part is made smooth, and it is the job of the user to keep it so—or the anti-friction bearing will be unable to function properly and its life will be materially shortened. As long as the ball or roller races are kept smooth the parts move easily, but once the races are rough the parts must travel up and down hill. No amount of extra care can possibly replace the worn or damaged portion of the bearing, once the damage is done.

The user has two methods of insuring the most service from his anti-friction bearings, proper lubrication and proper cleaning. It has been said that a properly lubricated anti-friction bearing will run for a month or more without additional lubricant, and if it requires lubrication more often either the wrong lubricant is being used or the bearing housing is leaky.

A great many of the anti-friction bearings are lubricated with a grease, and it is important that a careful selection of grease be made so as to serve the bearing adequately until the next period of lubrication. Bearings under different service, speed, atmospheric, and temperature conditions require a different type of grease. It is well to consult the established lubricating engineers or bearing manufacturers upon this point. For instance, if the bearing temperature is raised to a certain point and the selection of lubricant is not correct, the oil in the grease may boil out, leaving the "body" of the grease within the bearing—thereby producing a detrimental effect that may injure the bearing permanently.

A good lubricant will not only grease the bearing, but will prevent corrosion, keep out moisture and dirt, and prevent jamming of the bearing parts.

The application of the lubricant is second only to its choice. Bearing makers emphasize that only enough grease should be put in a bearing to coat the retainer and come level with the top of the bottom ball or roller. If the grease is packed into the housing so tight that the bearing must turn the whole housing-full of grease or churn it, the rolling element jams and slides, an unhappy condition that injures the bearing and requires additional power.



When greasing the bearing with a pressure gun, it is advisable to have a plug at the proper level in the housing as a sight-hole, with the pressure fitting on the opposite side and below the sight-hole. The operative can then readily determine the amount of lubricant applied and the greasing will be performed uniformly. If grease is pushed in until it pops out the end of the housing the bearing is too full.

Never allow any foreign matter to become mixed with the grease, and don't get the greases mixed as each kind has a specific purpose.

All solid and semi-solid greases—ranging from a stiff cup grease or stick grease to a very soft pressure gun grease—are made by cooking together, in a kettle with a power-driven stirring paddle, a mixture of soap, mineral oil, tallow—with, for certain greases—a filler such as graphite or mica. The mixing is done at high temperature and is continued as the mixture cools. When the kettle is cold, the grease is stiff; the liquid oil has been suspended in the soap and fat mixture or absorbed by it. As the grease is again warmed—as in a bearing—the mixture gets softer and will flow. The oil in a grease is what does the lubricating; and if the temperature in the bearing is raised too high, the oil will boil out of its filler or carrier of soap, which is not good as a lubricant.

Various grades and types of grease are made by changing the kind and amount of soap, tallow and oil, and changing the cooking temperature. A grease for a bearing that runs out-of-doors on a conveyor will be entirely different from one made for a bearing on a steam-heated cylinder like a dry can. Differences in operating temperatures of bearings call for different greases.

As previously stated, it is necessary that the bearing be kept clean and free from corrosion. Rust within the bearing will have a damaging effect on the races, and sand or some other hard substance will injure them. If the bearing has become dirty, wash it on top of the bucket of kerosene as sloshing it around on the bottom will allow the settled dirt to find its way inside the housing. The better way is to have two buckets of kerosene, one to remove the gum and the other for the final washing. In the final washing, hold the bearing just under the surface and spin it.

Some of these remarks apply also to plain bearings.

SPINNING ROOM PRACTICE

By Horace L. Pratt

Article 5

THE VARIOUS parts of the spindle and spindle installation, bands, tapes, thread guides, and spinning room practices in connection with these parts are discussed in this installment of the series, which is the fifth article. The series began in the March issue and has appeared subsequently in the April, May and July issues. Thus far general spinning practices, various types of long draft spinning, the drawing rolls, the spinning ring and the traveler have been studied. Article six, to appear in an early issue, will take up the builder motion. Save your issues and have the complete series . . .

WE HAVE SAID in previous articles in this series that the rolls, the rings and the travelers are very important units of mechanisms of the spinning frame. This is quite true; yet they are by no means all of the parts of the frame that could be classified as important. Much of the efficiency of the spinning frame hinges around the spindle, and for this reason this unit has been greatly improved as a result of study and experimentation on the part of the machinery builders with the co-operation of the mills.

The modern spindle must perform satisfactorily at speeds from 4,000 r.p.m. to 12,000 r.p.m. depending upon the yarn being run, the twist desired, front roll speed and other factors. From a study of mechanics we see that a ball bearing or a roller bearing spindle should give good service, but because of the lack of space in the spindle base it has until the last few years been difficult to design satisfactory anti-friction bearings. Engineers working on this problem have now satisfactorily overcome many of these difficulties and ball bearing and roller bearing spindles are now on the market (see Fig. 1). There are now nearly 12,000,000 roller bearing bolsters installed or on order throughout the world from one company.

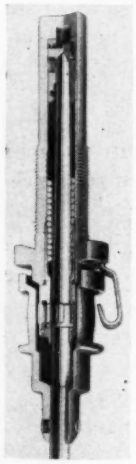


Fig. 1, two types of roller bearing spindles. Illustration at left courtesy S K F Industries, Inc., and one at right courtesy The Marquette Metal Products Co. . . . . .

The spindle of *any* type must be properly balanced so that it will find its center of gravity somewhat like a spinning top; it must run smoothly and without vibration at very high speeds, and with a gradually increasing load as the bobbin fills up; it must run with a minimum amount of friction, and it must be strong and sturdy, at the same time having no excess weight . . . a big order, indeed!

We are reproducing herewith sketches of the various parts of the spindle, the bolster and the base (Fig. 2). This should prove very helpful as each part is identified by its correct name. As a section man the writer used to wonder about the names of some of the parts. In this connection we think it would be well worth the time and effort for the overseer to secure cuts or drawings of the various units of the spinning frame; the catalog put out by the builder of the frames will often show the different parts in detail; get the secondhand and all the section men together and go over these illustrations, identifying the various parts by the correct nomenclature. Probably to call a "roping stick" a *roving skewer* will not make the frame run any better, but we are inclined to believe that a section man who is careless in the use of the names of the parts of the machine might be careless in fixing of the frame.

Installing the Spindles

The installation of the spinning spindle is a tedious job, one that must be done carefully, the plumbing of the spindle must be accurately done if the spindle is to perform satisfactorily. The holes in the spindle rail are made larger than the spindle base to allow for setting the spindle concentric with the ring, however on some makes of frames this hole is just large enough for the base of the spindle and the ring must be adjusted. This setting must be the same from the bottom to the top of the traverse of the ringrail; the spindle must be plumbed. It is almost impossible to give an accurate description of just how this is done, for there are certain skills in plumbing spindles that are acquired only after long experience. Just the slightest tap on the spindle base seems sometime to throw the spindle off center. Selecting the right thickness of paper* for shims, and getting the paper in the right place seems to be somewhat of an art. A home-made gauge for setting spindles is usually made by fitting a wooden plug,

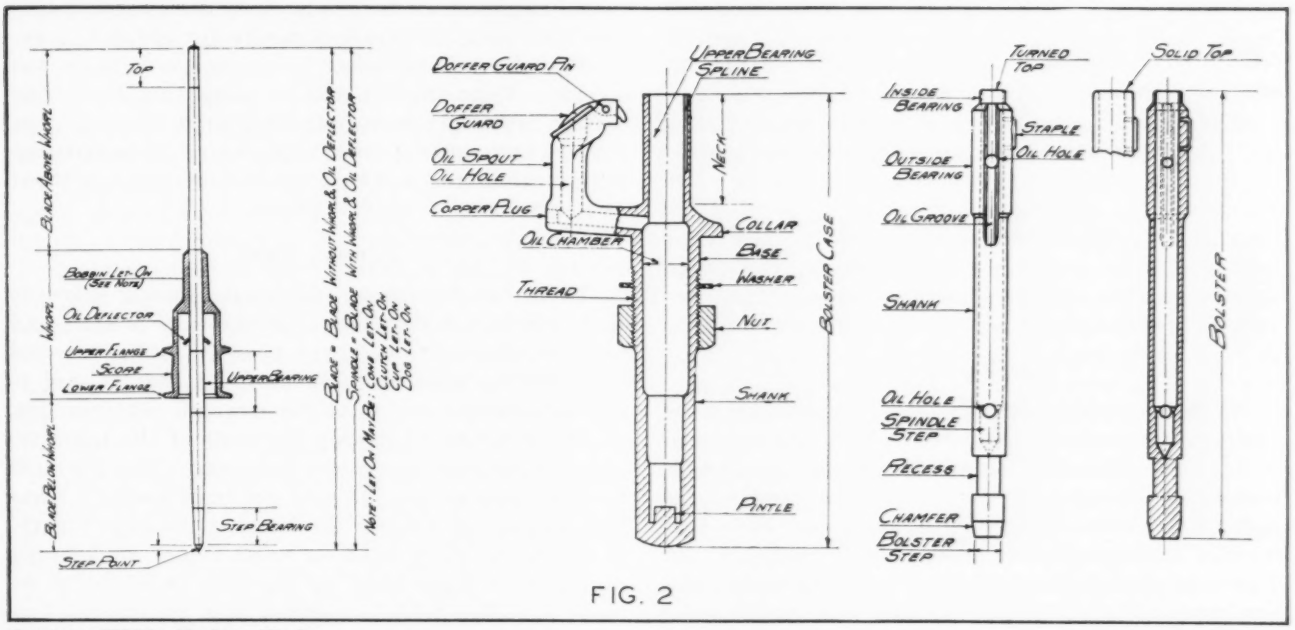


FIG. 2

Courtesy, Whitin Machine Works

slightly smaller in diameter than the ring, on a bobbin. This plug, sometimes colored with crayon or paint to make it more visible, can be moved up and down on the bobbin so that the setting of the spindle can be checked at both the bottom of the traverse and at the top as well. (This gauge must not be confused with the ones used by the overhaulers, who have two gauges, one with a plug fastened at the bottom and one with the plug at the top for plumbing the spindles while the ringrail is *stopped* at the bottom and then at the top, or vice versa, the builder motion at this time being disengaged so that the rails will be stopped while the spindles are turning.)

Lubrication of New Spindles

New spindles, like any other new machinery, should be watched carefully and oiled every two or three days, or as often as seems necessary until they are broken in. Because of the high speeds at which the spindles must run a light oil should be used. The spindle base forms the reservoir for the oil, and the bolster, which has oil holes, acts as a bearing for the spindle. It is customary in many mills to have the oilers refill the spindle bases every two weeks, and on coarse work, with spindles running at comparatively high speeds a little oil may have to be added each week. In some mills about every three months the spindles are lifted and the bases are filled from the top.

Oiling spindles should be carefully done. The thin oil wastes easily. The oiler should give the oil time to settle into the base, remembering that the oil must make a right turn in the spout. If the base is filled too full the oil is likely to get on the band or tape, causing slippage. The frames should be inspected periodically to see that the doffer guards are kept on. The doffer guard has a double duty to perform, first as a cover for the oil spout in the spindle base, and second, it serves to keep the spindle from coming out of the base in doffing when a bobbin fits a little too tight.

The question of cleaning out spindle bases comes up at the textile meetings occasionally, and so far, no general agreement has been reached as to the best method of doing this, or whether it should be done at all. In some spinning rooms the old oil is pumped out once a year, the bases cleaned with kerosene or some other cleansing agent, and the bases refilled with fresh oil. Other equally successful spinning room men claim that this is unnecessary.

Wobbly spindles, caused by a bent blade or possibly a bolster that is not in proper position, or the step point worn, will cause bad running work. A good fixer can often straighten his spindles, but if the step point has become blunt it is better to replace the spindle with a new one. We believe it to be the usual practice to put in a new bolster with a new spindle. The base should be removed from the frame and cleaned when a new spindle is to be installed.

Spindle speeds will vary with the yarn counts, the ring size, length of traverse and other variable factors. The present-day spindle is no doubt capable

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•The advisability of using paper shims for plumbing spindles, which is the practice in this country, has been questioned by a reader of COTTON in Scotland. Our correspondent with reference to the maintenance article on page 94 of the February issue, goes on to say "I was amazed not so much at the idea of packing spindles with paper, which we consider here only a fitter's dodge, but at this packing being given (as if it were a proper method) by a very able writer in COTTON." The editors of COTTON appreciate the compliment, but must admit that it is common practice in the United States to plumb spindles by using paper shims. The Scottish mill man explains that his mill, which even our biggest plants would consider large, spins from 10s to 140s without paper in any of the spindles, chastizing our industry further by saying that "it should be possible to do the same in any mill". This man, whom we know by repute to be a good textile engineer with experience in many countries, admits that the cost is high when paper is not used. Our Scottish reader explains the following as the procedure in this mill:

Previous to the machine arriving at the mill, the manufacturer sends the spindles and bases to the plant. Every one of the spindles and bases is gauged and tested by the mill to see if it is running true in the vertical position; this work is done in the testing department on a small section of a rail, and any parts not conforming exactly to the gauge or running true are rejected and returned to the makers.

When the spinning frame is erected the rails are also tested to determine if they are level. With the spindles running exactly true, and the ringrails exactly level, the Scot explains that there is no further trouble involved but to get the spindles in the center of the rings.

The frames are started and permitted to run six months, when they are again plumbed (after the frame has settled). Further information is given as follows: "Our frames are thoroughly reset every five years and the re-plumbing is included in the routine. Spindles are oiled yearly and pumped and oiled every three years, running 40 hours a week."

of higher speeds than the traveler will stand. It would seem that any further increases in spindle speeds will hinge on improvements that will permit higher traveler speeds than are possible just now.

The sizes of spindles are usually designated from No. 1 to No. 5. No. 1 is a small spindle and is used for fine counts; medium counts call for the No. 2 or No. 3 spindle, while No. 4 and No. 5 are used for coarse work. The spindle designed for the new large package frames is a sturdy, well-made, well-balanced spindle, capable of high speeds with a minimum consumption of power.

Spinning Bands

While the band-driven spindle is widely used, we believe that most of the new frames are equipped with tape-driven spindles. The first cost of bands is much less than that of tape. When a band breaks only one spindle is stopped as compared with four when a tape breaks. It takes a little longer to put on a tape than it does a band. But on the other hand the tape outlasts a band. The tension of the tapes on a frame will be more uniform than that of a frame equipped with bands. Then the tension pulleys tend to regulate the tapes under all conditions of humidity and temperature—while on days when humidity or temperature are at either extreme spinning bands are bad about coming off.

There are spinners who recommend bands made from yarn, in fact we have known bands to be made from dirty or mixed yarn that had been dropped on the floor around the spoolers. One can readily see that this practice will likely result in bands of many sizes being made, which will certainly not be conducive to the spinning of even yarn. The yarn band, when properly made, is very strong, but it is capable of so much stretch that following periods of humidity or temperature extremes yarn bands are likely to be stretched to the extent that they will not drive the spindle properly so slack twisted yarn and soft bobbins will be made.

To overcome this fault bands are very generally made from special, hard-twisted roving. The roving band will usually come apart and fall off rather than run slack. The machine on which the bands are made is a complicated mechanism, practically automatic.

It is always difficult to tie the bands with the same tension from spindle to spindle, though after some experience the bander should acquire a certain amount of skill and accuracy. Often there will be more than one person to tie on bands and of course their judgment as to what constitutes correct tension will vary. A banding device for correctly controlling the tension when tying on bands is on the market. Tests showed that by using this device the tension from spindle to spindle did not vary over 1½ pounds as compared with from one to 10 pounds variation when the bands were tied by hand without using the tension control device.

Spinning Tapes

There has been much discussion among spinners as to the best tape to use. If the tape is stiff and hard it will consume more power. A lighter and more flexible tape has been designed that is said to give satisfaction and meet the strength requirements.

The methods of joining the ends of the tapes together have also been much discussed. The lap must be as smooth as possible and not bunglesome. Some use devices for joining the ends of the tape together similar to those used on small belts. By keeping a supply of tapes fixed up the time required to replace a broken tape is reduced to a minimum. One method of stitching the tape is shown in Fig. 4, while Fig. 3 shows how the lap should be run. Fig. 5 shows a method of sewing tapes that has been found successful in several large mills.

The reversible tape drive makes for greater flexibility in spinning. With this improvement a frame can be changed from right-hand twist to left-hand twist, or vice versa, in just a few minutes.

After some years of service the spindle whorls on band-driven spindles will begin to show signs of wear, the V-shaped groove rounding out. Slippage may result as the rounded-out groove will not grip the band as well as the V-shaped groove. There is a practice in some mills of re-working the whorls. They are removed from the spindle blade, put in a lathe and re-shaped. While we have wondered whether in the long run this would pay, in the event the mill decides that the whorls are to be re-worked, an entire frame should be equipped with the reworked whorls. Then a careful check should be made of spindle speeds and twist so that if the reworked, and therefore smaller whorls make any appreciable difference in the twist a new twist constant can be figured. Worn whorls will cause undue wear of bands or tape and should either be re-turned or new whorls, and possibly new spindles, installed.

A wobbly cylinder, or one with loose laps or dents, is the cause of excessive wear of bands and tapes. It is usually a mean job to remove a cylin-

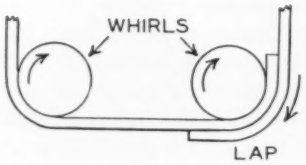


Fig. 3

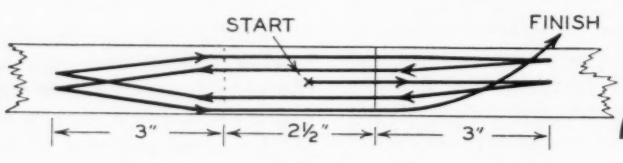


Fig. 4

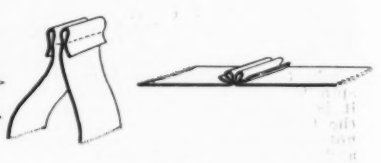


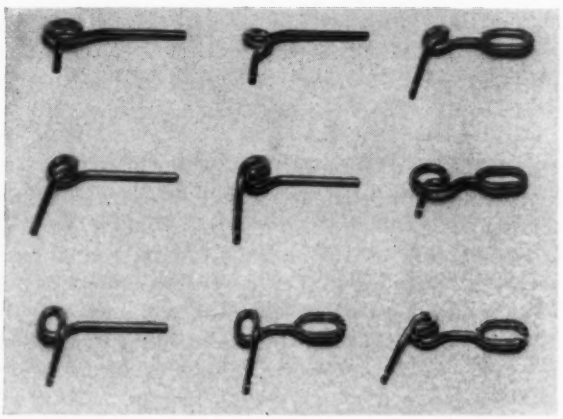
Fig. 5

Cut off approximately the correct length of tape. Put this tape around the cylinder and pull on the ends to stretch it. Set stop on collar of tape tightener rod so pulley will not hit the cylinder if tape is too tight. Stand on side of frame with the tape tightener pulleys, and put tape around cylinder. Turn one end of tape one complete turn and pin it, making a lap a little shorter than the gauge of the frame; now put it around spindles and tightener pulleys to see if the turn has been inserted in the proper direction. Sew tape according to diagram.—"Saco-Lowell Bulletin". At the extreme right is shown another method of sewing the spinning tapes that has proven successful in several mills.

der to have it repaired and straightened, and some section men will let them run as long as possible before removing them—and we must admit that the overseer is sometimes not without fault in this respect, as he will not want the frame to lose production as long as it will run. Both these policies are short-sighted, for in the first case the section man will probably have enough trouble with bands or tapes caused by a bad cylinder to more than amount to the work involved in replacing the cylinder, and in the second place the production lost by spindles stopped on account of broken bands or tapes can soon amount to more than if the frame were stopped a day for changing the cylinder. (We will have more to say regarding cylinders in the article on overhauling.)

Thread Guides

Fig. 6 shows illustrations of several types of thread guides. Especial attention is called to the little notch in the end that points toward the front. The purpose of this notch is to cut the thread if for some reason the yarn balloons to the extent that the yarn would begin to come out of the guide. This often causes the end to come down before much soft yarn is made.



Courtesy, Whitin Machine Works

Fig. 6

Some frames have thread board lappets made of wood into which the thread guides are screwed. On other frames the lappets are of metal and the guide is held in place by an adjusting screw. The setting of the guide is of as much importance as setting the spindle, but must not be set before the spindle has been properly plumbed. Each section man has a guide *set* that fits over the spindle and has a point reaching nearly to the guide. The thread guide should be adjusted so that the point of the *set* will be in the center of the opening of the guide, at the back of the opening. It will be noted that the lappets are hinged on the thread board which in turn is hinged to the frame. This permits their being thrown back out of the way when working on a spindle, when cleaning and in doffing. Care must be taken that all the lappets are down in place when the frame is started or the guide up out of place will cause ends down.

With the introduction of large package spinning the difference in the balloon of the yarn from the top to the bottom of the long traverse is so great that much strain is put upon the yarn. This has been remedied to some extent by the traversing for a short distance of the thread board. This thread board works on lifting rods that are moved by the same arms that traverse the ringrails, but from a point much nearer the fulcrum so that the stroke is a much shorter one than that of the ringrails.

The Use of Separators

Separators play an important part on the spinning frame. The ballooning yarn would soon become entangled unless the spindles were placed far apart. The use of separators permits narrower gauge frames, making possible more spindles to the frame and resulting in saving in floor space. It may seem somewhat of a paradox, that in spite of the good they do, separators are an evil, even if a necessary one. They catch lint and dust and are in the way of the spinners, the doffers and the section man. As the separators are sometimes handled pretty roughly by the doffers as they literally slam them back and forth in doffing the frame, they require close attention on the part of the section man to keep them tightened and in line. It adds much to the appearance of a spinning room for the section men to keep all the separators in line.

On some makes of frames the separators move up and down with the ringrail. Other frames have separators that are on separate lifting rods, with a slightly shorter stroke than the ringrails. In either case the object is to have the separators follow closely the center of the balloon of the yarn.

A summary of bad work on account of spindles and guides not set properly, wobbly cylinders, or cylinders with loose laps or dents and slack bands might be somewhat as follows:

Guides not set correctly:	Stretched yarn; Ends down; Worn travelers and rings.
Spindles not set correctly:	About the same faults as would be the case when guides are improperly set. (Ends down always mean lost production, extra spooler knots, scavenger waste, and more work on the spinners.)
Bad cylinders (wobbly, bent, dented or loose laps):	Slack bands; Broken bands or tapes; Soft bobbins of yarn; Ends down.
Slack bands:	Soft bobbins of yarn; Ends down.

As I See It

Here are some facts that could not be duplicated in any other country in the world:

Of 140 railroad presidents, more than 100 came up from the bottom.

Half the bank presidents of New York City came from the Middle-West and from farms.

Among 176 highest executives in the steel industry, 84 began as laborers, 26 as clerks, 25 as chemists or department managers, and 19 began as messengers.

This opportunity to rise from the ranks to the highest position has always been one of the things that distinguished America.

—Glenn Gardiner in "Management Information". Elliott Service Co., Inc.

THE JACQUARD LOOM

By James A. Ward

(Article 3)

THIS constitutes the third article in the series on Jacquard looms. The first installment appeared in the June issue and the second in the July issue. Here are discussed some of the more common defects in Jacquards and how to correct them . . . . . .

IN SELECTING and arranging the content material of this article, a definite plan has been followed, with a view to making it helpful and adaptable to the varying needs of those engaged in Jacquard work, and to diverse manufacturing conditions. The aim from the outset has been to be of practical assistance to the mill man in his effort to product quality fabric. The suggestions made are the results of experience. There have been times when the Jacquard became so much of a problem that some weave room overseers assigned a fixer to Jacquards alone. Theoretically the idea may seem a good one, but in my experience it has always ended in failure.

For the purpose of this article, an average weave room is assumed, regardless of size, one in which there might be Jacquards, harnesses, and pattern cards in varying stages of attrition. In such a weave room the faults selected have a practical bearing, but no attempt has been made to arrange these in order of occurrence or importance.

Defects in Jacquard Fabrics and How to Correct Them

The first defect taken up will be hooks. In the trade, hooks that give trouble and leave marks in the cloth are generally designated as "bad hooks". Bad hooks do not all mark the cloth in the same way, nor do they respond to similar treatment; some mark the fabric regularly, some infrequently, and again others mark it very seldom. Hooks that mark regularly may be traced by two methods.

1. The easier way is to note the particular shed or pick in which the bad hook misses (this can easily be done with the loom running full speed). Count the pick in which the hook misses as one, and count up to five, stopping the loom suddenly on the fifth pick. Where the filling has floated over nine warp ends, the middle one is the bad hook. Above the comber-board tie a few threads of yarn around this particular harness, sufficiently long to hang loosely over the front of the board. When the correct hook is lifted this yarn can be seen moving.

2. A second method is to stop the loom with the shed open as quickly as possible after the hook has missed, as can be seen where the filling is floated over nine warp ends. Count backwards to this point from the fell of the cloth (counting the loose pick in the shed as one) by pressing the filling away from the cloth with a pin, or the point of a reed hook. If the count is an even number, weave one more pick (the count should be an odd number for a double-cylinder machine) and as before, where the hook missed, select the middle end of the nine, loop a few threads around the harness above the board, of sufficient length to hang over the front. Trace to the Jacquard counting the number of hooks from the side, and the number of knives from front or back. Before climbing to the Jacquard, move the loom sufficiently to bring the two sets of knives almost level, but keeping the descending set the higher, thus permitting all the hooks to resume their original position.

Hooks that mark infrequently may also be found by two methods. The better and quicker way is to turn up the bottom side of the cloth, and pick out the warp where it has dropped. There is no need to pull it out, or even to break it; merely pull it sufficiently to make it comparatively tight, when it is easily traced into the harness.

If for some reason it is deemed inadvisable to trace the hook from the bottom of the cloth, it may with a little more time be found by first noting the particular shed or pick in which it misses, then, when it is about due to miss, stop the loom suddenly on that particular pick. This may have to be repeated several times.

Hooks that seldom mark the cloth can only be traced from the bottom of the cloth as already described. Any other way is just so much time wasted. Following the several methods of tracing bad hooks, is the problem material, where every effort is made to give distinctness to whatever may appear confused or obscure.

In the procedure of replacing the bad hook with a new one, the first action is to remove the neck-cork from the old hook. Here one is guided to the correct neck-cord by the yarn looped around the harness and lying loosely over the front of the comber-board. If the hook to be changed is near the side of the Jacquard where the light is good, little difficulty will be experienced, but if in a dark part of the machine, where the light does not penetrate sufficiently, or, if no light is available, cut two strips of white or very light-colored card paper about ¾-inch wide and about 12 inches long. Push these in from the side of the Jacquard, one on each side of the row in which the bad hook is, and turn them flat. The eye or crank of the needle will show up clearly against the white background. The "needle-dagger" need not be withdrawn until the new hook has been inserted. It is sometimes rash to assume the new hook is correct. Before insertion therefore, it should be compared with the old one, checking head, length,

and width of tail. In addition, a little oil, just sufficient to reach the needle-crank, should be rubbed on the upper part of the hook. The neck-cord cut off the old hook should not under any circumstances be tied to the new neck-cord. Such a practice will in short time ruin a harness. Before opening the knot formed by the joining of harness and neck-cords, a careful note should be made of the old level compared with the nearest knots, and the new knit made to this level. This subject is extended under the heading "neck-cords", immediately following.

Discussion on Neck-Cords

Neck-cords should be well stretched before being used. For a new harness they should be at least 12 inches long, double length, and should never be reused shorter than 10 inches. When a neck-cord breaks or is renewed, the neck-cord should never be tied to the part of the broken one remaining in the knot which joins harness and neck-cords together. The knot should be opened and re-made as it was originally. Before opening this knot, careful note should be made of its level compared with the nearest knots, and the new knit carefully adjusted to the old level, with both old and new neck-cords at the same tension. Two prevailing disadvantages, much in use, and which exist as part of an older Jacquard system, are a drawback to good work here. The method of keeping the glass-rod frame in position, and the type of knot used in joining the harness to the neck-cords.

The present system is to hold the glass-rod frame fast in place with screws, which makes access to the neck-cords quite a difficult matter. Erected in this manner the frame is a real hindrance to good work. A better plan is to keep it in position with two heavy wires extending from front to back, and having a small eye turned on one end, and having a cotter key in the other. One wire can be withdrawn leaving the other to act as a hinge, or both may be drawn out and the frame dropped down providing quick and easy access to all parts of the neck-cords. To return the frame to its proper place and insert the wires is only the work of a moment.

The knot which joins harness and neck-cords should meet four requirements. It should be easily formed, be non-slip, small, and easily opened. Of the two knots shown in Fig. 10, A is the one in general use, and meets only the first two conditions. B meets all four requirements.

If these two knots be formed and tested for the four qualities mentioned, B will be found the better knot in every way. It is very important that this knot open easily. To open the knot pull the cords apart at C and D. When through wear an unusually large number of neck-cords begin to break, it will give considerable relief if the size of the sheds is reduced, and the speed of the loom temporarily reduced. A wire loop as shown at Fig. 11 has been tried as a substitute for neck-cords, but never received a very favorable reception in the trade. The harness is attached to the wire loop at B. The loops A and C work freely on the hooks, and can be easily opened and removed.

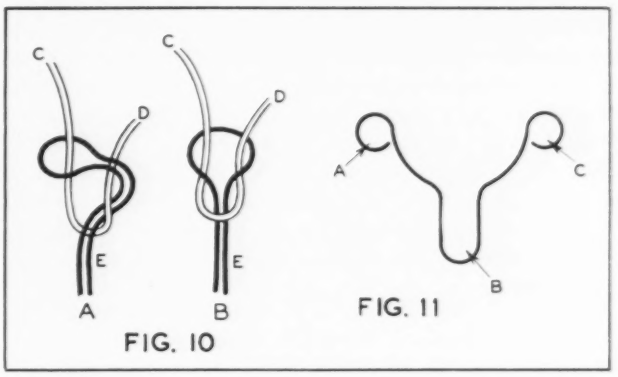


FIG. 10 FIG. 11

It is usual for the double-lift, double-cylinder machine—the one in general use, to have shallow or narrow knives which rise above the heads of the hooks. If, due to wear, a part working loose, or the need of re-alignment, hooks work underneath these narrow knives, they become bent out of line. Some Jacquards are fitted with deep knives which cannot rise above the heads of the hooks. But even this advantage has been turned into a disadvantage. With these deeper knives if the hooks are not carefully aligned to them, the constant rubbing of the heads against such a large surface area soon rubs the heads completely off the hooks. If a hook is bent near the side of the machine it can be easily straightened by taking hold of the head with one hand, and with the fingers of the other hand forcing the bent part back into line. But if it is difficult to reach, it can best be straightened by cutting off the neck-cord, and drawing the hook as high as the needle-crank will permit, bringing the bent part within reach. This method may take a little longer, but it pays big dividends. The use of various gadgets which invariably leave a kink in the hook is never satisfactory; this kink is likely to give trouble later, and besides it is poor workmanship.

Machine Bending Hooks

If the Jacquard is bending the hooks in one particular row, this may be overcome by placing a light wire along the front of the row, letting it lie on top of the needle bed, touching the hooks very lightly, and kept in place by being fastened at each end to the machine. When hooks are bending throughout the Jacquard, the knives should be re-aligned to the hooks. This can be done by removing the card cylinders, uncoupling the knives at the lifting poles, and lowering them to one-half inch below the heads of the hooks. Next successively test several of the knives by pressing them with the fingers slightly away from the hooks. These on resuming their original position should merely touch the hooks and not force them backwards.

Before loosening the knives it is well to make a score-mark on the frame, with a sharp tool or the point of a penknife. This will eliminate guesswork, show that the knives were really moved, and how much. When a hook turns sideways to the knife the tail has become closed, or, one hook has worn through the hook-grid into the space of another. If such a hook is near the side it is easy to open the tail suf-

ficiently and successfully, but if difficult to reach it is better to remove it and replace with a new one, otherwise the trouble is likely to be repeated. At any place where the hook-grid is worn through, a wire run from back to front and allowed to lie on the grid will prevent a repetition of the trouble. To bend the ends is sufficient to keep it in position. Since the hook must always fall in the same place on the hook-grid, and the tail is its principal guide, its importance should never be overlooked when a hook is giving trouble.

Replace Worn-Off Head Hooks

When the head is worn off a hook the only correct and wise thing to do is to replace it with a new hook. It may be easier and quicker to turn a new head, but to do so is to invite trouble, since those particular warp threads rising to a higher level will break more frequently. Even if time is taken to piece and re-level all the harness on the hook, it is at the best a lazy man's job, since in addition it creates two levels to which the knives must be adjusted. A few hooks should be kept hanging near the Jacquard, this will save time. A little oil rubbed along the top of the knife occasionally will prolong the life of the hooks.

A hook that drops too slowly is probably binding at the needle-crank, or the hook tail is open too wide. A few drops of oil on the top of the hook, sufficient to reach the crank, may free it, or the tail may have to be closed. But the trouble may be in the harness and not the hook. If the glass-rod frame is too low, the harness will spread and overlap on the glass-rods preventing some from dropping fast enough. Dusting the harness with French chalk to make it slippery may help, but it will not remedy the condition. The only remedy is to raise the glass-rod frame, and this most likely will upset the level of the harness. This frame should always be fitted close to the knots where harness and neck-cords are joined, and not a couple of inches below.

If the hooks catch on the knives when not wanted to, they don't present so great a problem as those that miss the knives. Because, if no part has worked loose, either the card cylinder is not pressing the hooks clear of the knives, or the lifting poles are too long, preventing the knives from getting away quick enough.

Replacing Broken Needles

The needles of the Jacquard control the hooks, and are in turn controlled by the pattern cards. In fact it is rather difficult to say if a mark in the cloth is from a hook or a needle. The hooks may be more in the foreground and even get a little more prominence, but of the two, the needles are perhaps the more important. How much so, may be seen from the problem material which follows. Compared with a needle, putting a hook in a Jacquard is a simple matter. Changing a needle means changing neck-cord and hook also. And it would be interesting to know if anyone has been found who enjoys putting a needle in a Jacquard on a hot day. Doing this at any time requires a certain amount of skill, care, and quite a little patience. If the broken needle is near the top of the upper needle-bed it is possible to put it in without removing the hook, but in any other part of the machine the hook should be removed. This removes all obstruction, is easier, quicker, and more likely to be correct.

Those who attempt to insert a needle without removing the hook, bend the point of the needle to let it pass the hook, and straighten the point before entering it in the needle-plate. Since even new needles are not always straight, it is a good plan to check them for length, position of crank, and straightness. The starting point is at the small guide pin which passes through the retaining eye at the back end of the needle. The needle should be inserted on the same side of this pin, as the other needles in that row. To insert it on the wrong side means losing control of the needle and allowing it to wander through the Jacquard. If it is near the side of the machine, no difficulty is experienced in guiding it through. All the existing difficulties are encountered in the middle where the sole control of the needle is from the back end. If a light is available, it will be found more convenient to hang it close to the needles at the required level on one side of the machine, and work from the other. If no light is available, a couple of strips of white card paper can be stood on end close to the needle-bed which will form a light back-ground against which the needle can easily be seen. The needle should be checked when inserted to find if it is perfectly free, and after inserting the hook, and again when the spring-base has been tightened on. It is not enough that the broken part of the needle has worked out of the needle-plate, the broken part should be located and carefully removed.

Binding Needles

Seemingly for no cause whatever a needle will commence to bind. Such a needle might be slightly bent at the point, dirt may have gathered in the hole of the needle-plate, or a piece of the needle-spring may have broken off and locked with the needle. Or, again, when the needle-cranks become weakened through wear, they are easily bent, and this may have happened when the hook at some time was forced out of the crank by the knives. In such a case it is better to replace the needle with a new one, which is only a few minutes work. Sometimes one of the plates working out of place will bind a needle. When the Jacquard is not fitted with skeleton needle-plates, it is better to clean the needle-plate with gasoline or paraffin. But, if skeleton plates are fitted behind the ordinary needle-plates, better results are obtained by removing the plate and cleaning out the holes with a piece of needle wire filed flat on the point. Troublesome needles should be tested from the needle-plate to see that the needle-spring returns the needle quickly and sharply to its original position; there should be nothing slow or sneaky about it, otherwise the hook may miss the knife.

(The series on Jacquards will be continued in an early issue, at which time further defects will be discussed.—The Editors.)

Representatives of twenty-odd textile concerns attending the Blue Ridge conference

Sound Program of Human Relations Insures Industrial Peace

A report of the Blue Ridge conference on human relations in industry . .

Report of conference and group photographs by John C. Fonville of "Cotton".

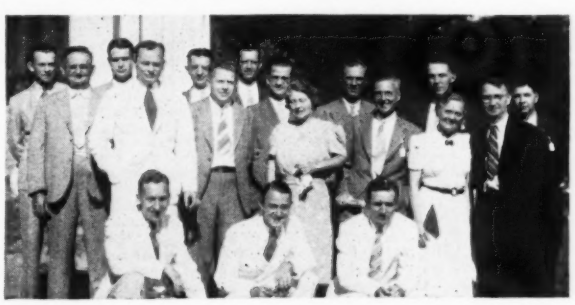
IF WE ARE to have industrial peace, we must have a sound policy of human relations and personnel administration, and today the technique of personnel administration is more important than the technique of business finance, production, and merchandising. These strong statements were the keynote of the 20th annual session of the Southern Conference on Human Relations in Industry, which was held July 13-15 at Blue Ridge, North Carolina.

More than 350 executives gathered in open forum fashion to discuss the subject that is considered by them to be the only logical path to a sound business program—human relations in industry. These men discussed their intimate organization problems in personnel administration on the basis of a mutual exchange of information, feeling that industry in general has not only been backward in this phase of business administration, but relatively has been in a stupor.

The conference consisted of many different types of industrials, all working toward the same goal and with but a single purpose, for it has been generally conceded that one company with an excellent human relations program cannot become isolated, but is affected by conditions in industry at large. The conference furnished the opportunity for education and agreement of business in the steps that it is to take in the future.

It was freely admitted that the South, like other sections of the country, has not fully recognized its job in personnel administration, and it is only now beginning to realize that it is necessary to deal with personnel matters through a trained group of people, with specialization in this field essential. The point of specialization by trained forces was brought home when one speaker told of taking the advice of the lawyer, because we have confidence in him and are not ourselves acquainted with the intricacies of law; we take about one-third of the advice of the doctor, because we are more or less familiar with general medical practices, and if we know we will live for another day we can afford to omit the last pill or so; but when it comes to taking the advice of the personnel manager concerning some problem that has arisen in the plant, *we don't even listen to him—for every man considers himself to be a specialist in the administration of personnel relations.*

Below: U. S. Rubber Products mills were represented by men from plants in Georgia, South Carolina, and Tennessee . . . . . .



It will be noted in the foregoing paragraph that it is the "advice" of the industrial relations manager that we do not take. It has in no way been suggested that the personnel manager be given the authority to override the decisions of the executives. The three prerogatives of the industrial relations department are *the right to know, to advise, and to warn.* It is essential that this department keep itself posted on what is occurring, it is its duty to advise for further action, and it is its inalienable right to warn.

All speakers at the conference, chosen as leaders in their field, were subject to questioning. It was interesting to hear the direct and completely unqualified answers to pop questions from the floor. One speaker waded into the subject of unions and their possible benefit to labor and their place in society. He admitted that there have been times when labor has been so treated that organization by them was necessary, but this is the exception rather than the rule. Some companies have signed up or encouraged their workers to become members of the AF of L because they prefer this to the CIO, and vice versa. This speaker has had experience with the AF of L, but pointedly said that if "the CIO is any

The textile industry was well represented at the conference on human relations. Inspection of the registration lists showed that representatives of 24 textile organizations or chains of mills attended the meeting. On the conference committee from the textile industry are Donald Comer of Avondale Mills, T. M. Forbes of Cotton Manufacturers Association of Georgia, Luther H. Hodges of Marshall Field & Company, Robert E. West of Riverside & Dan River Cotton Mills, and H. Gordon Smith of U. S. Rubber Products, Inc.

Avondale Mills of Alabama reversed the procedure and instead of executives were represented at the conference by operatives selected from each plant in the chain of mills.

Speakers for the conference included Luther H. Hodges; George D. Heaton, First Baptist Church, Lynchburg, Va.; Carroll E. French, industrial relations counselor, New York; C. R. Dooley, Socony-Vacuum Oil Co.; T. M. Forbes; Guy Via, Newport News (Va.) Shipbuilding & Dry Dock Co.; Warren Whitney, National Cast Iron Pipe Co., Birmingham; Victor N. Short, Institute Human Science, Springfield, Mass.; Harry N. Clark, industrial relations counsel; Samuel F. Clabaugh, Southern States Industrial Council, Nashville; and Thomas G. Spates, personnel director, General Foods, Inc., New York City. R. B. Robertson of Champion Paper & Fiber Co. is chairman of the conference.

These girls and boys are from the Avondale Mills of Alabama. When they get home each gives a report of the Blue Ridge conference to his or her respective plant . . . . .

worse than the AF of L, then I don't want any part of it!" He reviewed cases of signed contracts with the AF of L and how this union has unlawfully broken the contracts before their expiration, by striking and by picketing without notice.

The unions are not in all of this speaker's plants, though he said that he thought them necessary in the unionized plants because of local conditions at the time; they have been literally kept out of the other plants because of an existing sound policy of personnel administration. The union cannot gain a foothold because the operatives are satisfied with the fairness of the present management. He intends to keep them satisfied.

Written Statements of Policy

An important point brought out by several men is the advisability of preparing written statements to the employees. This could be in the form of the financial statement, a personal letter from the executive telling of business conditions or general occurrences in the plant, etc. It is not so important to the operative *what* he is told, but the fact that he *is* told and *is* considered a part of the business is of importance to him. There is no intent in this suggestion to mislead the operative in any way, and it was heartily agreed that never should different financial statements be prepared for the directors and for the employees—this is an insult to an employee's intelligence; rather, it was humorously added, the stockholders and directors prefer their own statements prepared so that they themselves and the operatives may understand them.

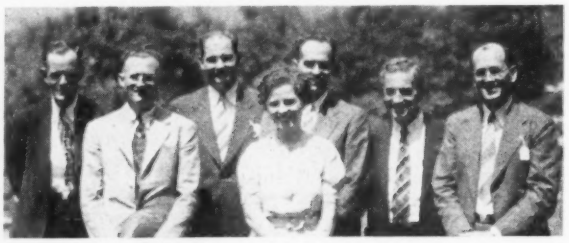
Though we may have personnel departments, there is still the personal touch to be maintained by the chief executive and his staff. Numerous incidents were given to prove this. In bringing home this point, one speaker told of visiting a chain of textile mills in Alabama where the operatives asked for the general manager to handle their problems, which any clerk could have handled, but these people felt that no one could handle their own specific problems like this particular general manager. "There is still no substitute for the personal touch between the executive and the worker."

One executive had made a cross-section survey of industrial relation programs and work in various industries of the South, and it was interesting to note in some places the bizarre duties of the personnel manager and his department, but the point driven home was that though many companies had maintained such departments for 20 years, and others had little or no department, in each instance "the surface had only been scratched". A welcome trend in southern industrial relations programs is away from the welfare or paternalistic attitude, toward a scientific, selective, specialized, and intelligent approach. But again the surface in this field has only been scratched.

Whatever other points are included, a program of personnel administration should at least include provisions for adequate pay for services rendered; reasonable hours and safe working conditions; clear cut policies; proper placement of employees; help individual employees to make progress; aid employees in need and encourage thrift; co-operate in outside activities such as housing, hospitalization, recreation, etc.; have an open door policy of management; recognize human rights and human desires; have friendliness and fairness. The successful personnel organization renders the service of simply and effectively tying together all members of the organization so that they are working together pleasantly and harmoniously.

The question was often raised if the same principles apply in the administering of human relations with both large and small organizations; assuming that the employer has founded his department to promote earnestness and absolutely fair dealings for his employees, the principles of administration are identical in industrials, regardless of their size, or whether the personnel manager is a part-time employee in this branch or has a staff of a hundred.

Successful executives favored reducing definite labor policies to writing, both for information of employee and employer or his staff. At the present this is not general practice in the South, though in a show of hands a small percentage do so. There was some doubt by executives not having a definite written labor policy as to whether this would function in the best interests of all concerned, but nothing was said to indicate that the companies having written policies are dissatisfied with them. The written policy might contain such items as those regarding equitable wage structure, collective bargaining, adjustment



Group of executives from Martha Mills, Thomaston, Ga., attending the conference on human relations . . .

Departing from the subject of human relations, during the afternoon group discussion the subject of southern industry and public relations were considered. It was agreed that industry has been in the public dog-house for years, but it is a sad commentary on industry's intelligence that nothing has been done about it. It was brought out that industry and politics at the moment are competitors for the confidence and favor of the public. Politics knows this, but industry for three years has acted as if it did not. Industry has pouted and scolded and sulked, but it has not rolled up its sleeves and sold. Politicians have continued to do a better selling job than business. The time has come that industry must make a more constructive approach to the problems of relations with the public. Industry's case must be taken back to the people, who alone have the power to save it from economic ruin.

There must be a fundamental change in the philosophy of industry as reflected in its attitude toward the public, based upon the recognition that all industry is so inter-related that no single business can isolate itself and pursue policies that are not consistent with the general economic good.

of grievances, announcement of holidays, provisions for employees against major hazards of disability and old age, and unemployment.

It was suggested that the employees especially be kept informed of plans that affect their general welfare. So often in conferences of executives and union officials in an attempt to reach a satisfactory agreement, the employees know nothing of proposed issues by the union officials representing them (or possibly the union would not still be in force). On this point it will be helpful to publish a statement or post it on the bulletin board giving information on what took place in the conference. The unreasonable demands of union officials have been stymied by a verbatim report of such a conference, which the employees are entitled to read, inasmuch as the discussion concerns their welfare.

As a parting word to industrialists of the South, the conference was told that in spite of such meetings as are being held annually at Blue Ridge and at other points in this country, not enough companies are becoming seriously concerned with their own problem of personnel and human relations. We may eventually install such a department and take it seriously through imitation of some other successful industrialist, we may do so through fear of government regulation or unions, or through economic pressure, but we should consider it from the standpoint that good personnel administration is good business judgment—which will pay a return on the investment. If this is not done, we can expect a further program of interference from the government in business and labor control. The challenge is to industry.

Statistics on Textile Machinery in the United States

A COMPREHENSIVE PICTURE of equipment in cotton mills and woolen and worsted mills, as of July 1, 1939, is given in a compilation just prepared by Davison Publishing Company, Ridgewood, N. J., for use in the forthcoming edition of Davison's Textile Blue Book. The tables, reproduced here through courtesy of the Davison company, show, by states, the number of cards, ring spindles, twister spindles and broad and narrow looms in the cotton mills of the United States; and the number of sets of cards, spindles and broad and narrow looms in the woolen and worsted mills.

The original table for cotton mill machinery shows also the number of mule spindles as follows: Connecticut, 67,760; Massachusetts, 28,400; North Carolina, 8,000; R. I., 576; South Caroline, 3,000; and Tennessee, 5,000; (none in other states); total for U. S., 112,736.

Comparison of the totals of cotton mill machinery reported July 1, 1939, with similar information reported July 1, 1929, shows the following: The number of cotton cards has increased from 73,044 in 1929 to 79,583 in 1939; the number of ring spindles has decreased from 33,261,828 to 25,482,240; mule spindles have decreased from 1,641,256 to 112,736; twister spindles have decreased from 2,071,547 to 1,828,196; and broad and narrow looms have decreased from 722,303 in 1929 to 522,615. This shows a shrinkage in every element except cotton cards, where an increase is noted.

Similar shrinkage of equipment is noted in comparing woolen and worsted machinery in 1929 and 1939. Card sets reduced from 9,082 in 1929 to 7,563 in 1939; spindles from 5,105,297 to 4,145,048, and broad and narrow looms from 86,990 to 57,120.

Cotton Mill Machinery
in the United States, July 1, 1939

States	Cards	Ring Spindles	Twister Spindles	Broad and Narrow Looms
Alabama	7,438	1,803,598	95,336	37,201
Arkansas	195	40,992	3,000	686
California	103	24,200	7,000	683
Connecticut	1,320	487,784	93,230	12,295
Delaware	----	----	----	32
Georgia	13,743	3,209,949	364,660	54,461
Illinois	47	2,620	----	1,035
Indiana	196	70,696	----	1,861
Kentucky	183	32,536	5,728	229
Louisiana	222	54,444	----	2,245
Maine	1,955	687,776	28,704	15,758
Maryland	311	77,740	10,966	896
Massachusetts	6,429	3,262,274	227,205	68,600
Michigan	77	28,028	1,400	188
Mississippi	454	173,436	752	4,658
Missouri	82	----	----	----
New Hampshire	1,763	431,876	500	11,665
New Jersey	430	140,924	52,478	2,868
New York	1,462	260,380	23,760	6,922
North Carolina	20,543	6,046,619	641,970	80,254
Ohio	222	3,196	----	282
Oklahoma	100	25,200	----	690
Pennsylvania	421	100,283	19,884	10,782
Rhode Island	2,134	824,010	22,648	20,831
South Carolina	13,106	5,744,483	125,194	143,132
Tennessee	1,795	576,223	40,560	7,734
Texas	1,160	209,820	12,694	5,247
Vermont	164	98,512	180	2,173
Virginia	2,060	635,668	18,116	17,352
Wisconsin	52	----	----	60
Total	78,167	25,053,267	1,795,965	510,820
Reported Idle	1,416	428,973	32,231	11,795
Grand Total	79,583	25,482,240	1,828,196	522,615

Woolen and Worsted Machinery
in the United States, July 1, 1939

States	Set Cards	Spindles	Combs	Broad and Narrow Looms
Alabama	15	800	----	----
California	31	12,248	----	84
Connecticut	483	181,933	4	3,373
Delaware	3	3,000	3	50
Georgia	197	35,566	24	958
Illinois	81	23,058	4	329
Indiana	81	29,298	----	397
Iowa	19	8,920	----	111
Kentucky	20	21,872	18	10
Maine	495	236,872	27	3,354
Maryland	25	8,520	----	168
Massachusetts	1,990	1,180,567	999	12,827
Michigan	77	35,767	----	306
Minnesota	40	9,725	----	127
Missouri	10	2,526	----	56
New Hampshire	395	175,084	10	2,398
New Jersey	259	253,564	195	3,366
New Mexico	---	------	----	22
New York	858	275,442	49	5,496
North Carolina	82	25,440	----	682
Ohio	272	66,974	54	1,338
Oregon	45	19,438	7	264
Pennsylvania	787	506,431	211	7,446
Rhode Island	537	676,611	532	5,807
South Carolina	4	12,162	----	269
Tennessee	111	43,516	----	639
Utah	4	2,240	----	20
Vermont	154	67,942	----	1,328
Virginia	49	29,262	2	528
Washington	8	4,544	----	59
West Virginia	37	23,860	5	263
Wisconsin	103	32,872	6	386
Wyoming	2	528	----	10
Total	7,274	4,006,582	2,150	52,471
Reported Idle	289	138,466	106	4,649
Grand Total	7,563	4,145,048	2,256	57,120

CURRENT TEXTILE TOPICS ....

Talk of the Month

THIS SUMMER has been productive, for a time at least, of a return to conditions under which cotton manufacturers and other business interests found normal fundamentals paramount. Forecasters, after speaking with tongue in cheek since 1937, had a chance at last to predict with some show of assurance and enthusiasm. Prospects, as well as actual business developments, appeared favorable on as enduring a basis as one could expect in the status quo of world and national political affairs.

Business actually holds the center of interest

Political-economic matters remained a part of the situation in the cotton industry as the second half of the year got under way, but they were such things as the undetermined subsidy plans for exports of the raw staple and the wage-hour controversy. With these commanding much attention, it was nonetheless true that fundamentals of supply and demand were the center of interest in the cotton manufacturing industry through the past month.

Long before August, it was apparent that the statistical condition from the mill standpoint, was vastly improved. Stocks of print-cloths were poorly assorted and premiums for spot goods were paid in some cases by buyers pressing for quick shipments. A survey by The Cotton-Textile Institute disclosed the gratifying circumstance that unfilled orders for cotton goods, as early as the second week in July, were in excess of mill stocks.

Along with this condition, it was apparent that adherence to the severe curtailment program by print cloth mills would create considerable stringency of supplies in a market of rising demand for cotton goods. The inquiries for goods through a period which is wont to be one of the poorest in the year was significant of low stocks not only at the mills but among converters of gray goods and distributors of cotton merchandise.

Among the textiles in general, all three of the leading fibers showed a healthy trend of development. Wool goods have been improving since last fall and made a quick pick-up on fall lines after the spring lull. Weaving of rayon goods has had its peak of production for the year since the spring. Only the silk textiles have shown uncertainty, a condition due to tightness of supply in the raw material and consequent peak in prices for about nine years.

Some of the slack in silk manufacture has been taken up by rayon and a number of producers have been forecasting another record year in consumption of the synthetic fiber. Manufacturers of cotton goods, however, are said to have been pushing the styling of their lines and talking less of possible inroads from spun rayon in the division of dress goods.

Back of the encouraging general textile position is the better retail trade already developed this year and confidence of distributors that the fall will be more active than that season of 1938. In recent years buyers have been cautious toward the fall. This year they look for an early and active trade, which means that it would be dangerous to enter the season without adequate commitments, especially in view of the low reserves in primary hands.

Mid-summer reports indicated that cotton goods were going into consumption at steadily increased rate. Stocks of apparel manufacturers, jobbers and retailers were reduced to small compass by consumer demand. Converters reacted to this situation by seeking advance deliveries of gray cloths on orders placed early for shipment late in July or early in August. The clean-up of stocks by distributors supplied them with cash that helped the early placement of orders for fall lines of merchandise.

Linked up with the picture in textiles is the best residential building movement in 10 years, the good gain in automobile manufacture this year over last and other industrial progress. The industrial specialties in cotton goods have been gaining ground in a promising way. As we have cited in the past, goods for industrial uses bulk large in cotton manufacture when sold normally. They are said to be taking some of the strain off standard constructions by spreading the current demand for mill output.

Print Cloth Curtailment Changes Buyers' Attitude

This change may mean much in the progress toward profitable levels of textile production, for the competition in a market of concentrated demand over the past two years has been inordinately severe. All branches of textiles have had a struggle with buyers on prices in that period. Likewise all are showing a firm position this summer and, with fair prospects of lasting broad consumption, manufacturers are hopeful of a profitable period.

Alluding to the encouraging situation around mid-July, the market comment in some quarters was that undoubtedly cotton mills could make money in the last half of this year if they held production down to actual orders. Curtailment by printcloth mills was a step toward that end. It appeared that other divisions of manufacture were already about to benefit from their earlier adoption of sound production practices.

Buyer attitude toward prices quickly changed when it became manifest that printcloth mills were definitely committed to a conservative policy for the summer. Buyers readily paid the advances demanded on the large business of early summer. The mills still had a long way to go to offset the long descent of prices in 1937-1938, however, and it was clear that the task would not be easy. It was intensified by the rising cost of cotton and the wage prospects.

MID-SUMMER CONDITIONS for cotton mills of New England were of a very encouraging nature, particularly in the predominant field of fine combed cloths. This branch of cotton manufacture, as repeatedly stated for a long time, has operated on a constructive basis. Depression has meant poor business and losses. The policy of production in accordance with orders, however, has minimized such losses and, now that buyers are on the defensive, the outlook for profitable operation appears promising.

New England Mill Situation

Prices showed definite advances early in July and sales were fairly consistently above production for fine combed goods from early in June. During the month of July the manufacturers showed reluctance to the making of commitments for future delivery at the prevailing spot prices. Curtailment was continuing, as it had been exercised for months, and the feeling seemed to be that this month would find mills in a position to increase production on a favorable basis.

Some producers of fine goods asserted that business of June exceeded output by 60 per cent. While actual advances of the market the first part of the summer were restricted, the hardening of values was signified by the refusal of producers to sell well ahead at the prices they would take for immediate deliveries. Mill men feared that they might be making deliveries on contracts at prices below the prevailing market should they take orders ahead at spot levels. This, incidentally, was a measure of the confidence in the outlook.

Improvement in the situation on finished goods has been helping the outlook for mills. Mill margins in general, it is reported in one quarter, fell to the lowest level in six years. A better prospect for finished goods, drastic mill curtailment and higher basis for raw cotton all contributing toward making the early summer spurt in combed fabrics a feature of the general upturn in the cotton textile market.

Curtailment has been broad this year, but the situation is relative. The year has been more normal than 1938 and even the low operations of early summer were about 30 per cent above the bottom last year. It is estimated that the fine goods producers of New England lowered their operating schedules by 17 per cent between February and May. Preliminary figures indicated a slight increase for May over June.

Of serious import to the cotton mills of New England, as well as the country, is a report on an agreement between the United Kingdom and India by William H. Cliff, of the Home Market Club. The case of threats to American mills (as well as cotton growers) under the Anglo-American trade pact is aggravated by this agreement of the British with India.

Consummated less than three months after the pact with the United States, the agreement with India commits the United Kingdom to imports of Indian cotton in the following quantities: the current calendar year 500,000 bales, next year 550,000 bales and in subsequent years 600,000 bales.

"Naturally with her buying short and fair staple cotton in huge amounts from India and the long-staple variety from Egypt, plus additional purchases in Brazil, the outlook for our cotton growers is very dubious," states Mr. Cliff. "Because of these purchases and on account of our reduction of duty on cotton fabrics, she (Great Britain) is now in a position to flood the American market with her manufacturers of cotton.

"For instance, prior to the first of the year, when our duty was 44½ per cent, English cotton broadcloth sold in the domestic market at 58 cents per yard. Now, with the duty reduced to 36 per cent, it is selling for 34 cents per yard, while prices on comparable American fabrics range from 53½ to 56½ cents per yard."

This directly affects only the competing American mills. But, as pointed out by Mr. Cliff, "It is only a question of time when the American mills will of necessity buy less and less American raw cotton from the American grower." And the Administration is working so hard to find a foreign outlet for our cotton?

In the way of plant developments, progress is reported in getting into operation the Taber Mills, at New Bedford, under the new management. Forty of the looms have started, on the production of surgical goods. This will be one of the principal products of the plant, but such goods as marquisettes and lawns also will be manufactured.

The New Bedford Women's Civic Betterment Association has recently been active in a campaign aimed to save the tire fabric plant of the Goodyear Fabric Corporation, which formerly employed 1,000 persons. It has been closed for 16 months, but the machinery has been kept in condition for operation. There has been talk of transfer to the South of much equipment and sale of the rest.

The second floor of the Nonquitt Mill No. 1, New Bedford, operated sometime by the Edgar Weaving Company, has now become a rayon plant. The Ramsay Mills were formed to establish a rayon weaving unit. Production is reported to be on rayon satins and taffetas.

The Chicopee Manufacturing Company, which purchased the Coolidge mill of the Amoskeag plant at Manchester, N. H., in December, 1936, has inaugurated a 36-hour work week there. The management first experimented two weeks with four shifts of six hours a day in the carding department.

Previously the plant operated five days a week on three 8-hour shifts. For more than a year it ran three such shifts. A notice to employees stated that "it is expected that the average weekly wages will not be less than the present scale and that over a period of time employment will be increased considerably."

This move is in line with the company's policy of "maintaining as high wages and short working hours as may be consistent with competent conditions." The mill manufactures gauze and cheesecloth, and is a subsidiary of Johnson & Johnson, first aid and medical supply company, which operates a mill in Gainesville, Ga., where the four 6-hour shift program has been in operation for many months.

"THE SITUATION"

As Seen Across an Executive's Desk

July 18, 1939

Export Subsidy Plan Is Another "Blood-Letting"

THE TEXTILE MILLS are in for another blood-letting with the announcement on the part of the Secretary of Agriculture of the Department's commitment to the export subsidy plan as the only solution, in their eyes, of the country's cotton problem. This entire project is just as outrageous as far as the textile industry is concerned as any scuttling of a ship by pirates of the Spanish Main.

It was extremely evident from Secretary Wallace's manner when he met with representatives of 19 cotton and trade associations at his invitation to discuss the export cotton program that he was not interested in any result except moving cotton out of government warehouses before the 1940 election prospects became crystallized. He doesn't care who buys the cotton or how little they pay for it, just so the country may be rid of its excess baleage. He is not interested in the fact that by subsidizing foreign cotton manufacturers he may throw ½ million American cotton manufacturing employees out of work. After all, these employees are not in his jurisdiction. They belong under the category of "Industry", which conveniently in this case is relegated to the Department of Commerce. All Mr. Wallace is interested in is cleaning house in his own department and saving his face for 1940.

Invitations issued by the Department of Agriculture to those in the textile industry were limited to five representative organizations. These five representatives filed a vigorous protest on behalf of their own organizations and state textile associations in which they opposed the export plan *in toto*, offered a substitute plan which would give each person of the thirty-odd million "ill-clothed, ill-nourished, and ill-housed" citizens $1.00's worth of cotton clothing which would take care of the money allocated in the farmer appropriation bill for the removal of surpluses which would use up domestically the amount of cotton proportionate to that which is anticipated will be exported under the subsidy plan.

The cotton-textile interests pointed out the fact that under the Reciprocal Trade Treaties they had no tariff protection and without tariff protection imported goods made from subsidized cotton could instantly wreck their market both in prices immediately effective and the placement of orders over a long period of time. They pointed out that this entire program promised to jeopardize one of the largest industries in the United States and would probably create wide spread unemployment and social unrest.

Despite that, however, tentative plans call for the start of the export program August 1, which is the beginning of the cotton trading year.

At the conference on the matter experts and leaders in the raw cotton trade estimated that the subsidy program would not bring about a great increase in exports of raw cotton. They pointed out that European cotton warehouses were empty and that if the program was not adopted a large export business would in all probability materialize this year, and that the only possible benefit to be derived from the export subsidy program would be a possible, eventual reduction in foreign cotton acreage.

Another Processing Tax?

At the conference it was also apparent that the processing tax will be a very live issue next session of Congress. Secretary Wallace's program for subsidizing exports and continuing payments of farmer benefits involves a program of expenditures amounting to many hundreds of millions of dollars and he feels definitely that this money should be contributed by domestic cotton manufacturers, and so this is just a warning. Be on the look-out next year for processing taxes and do not forget to have this in mind when quoting on big orders of forward goods, if any.

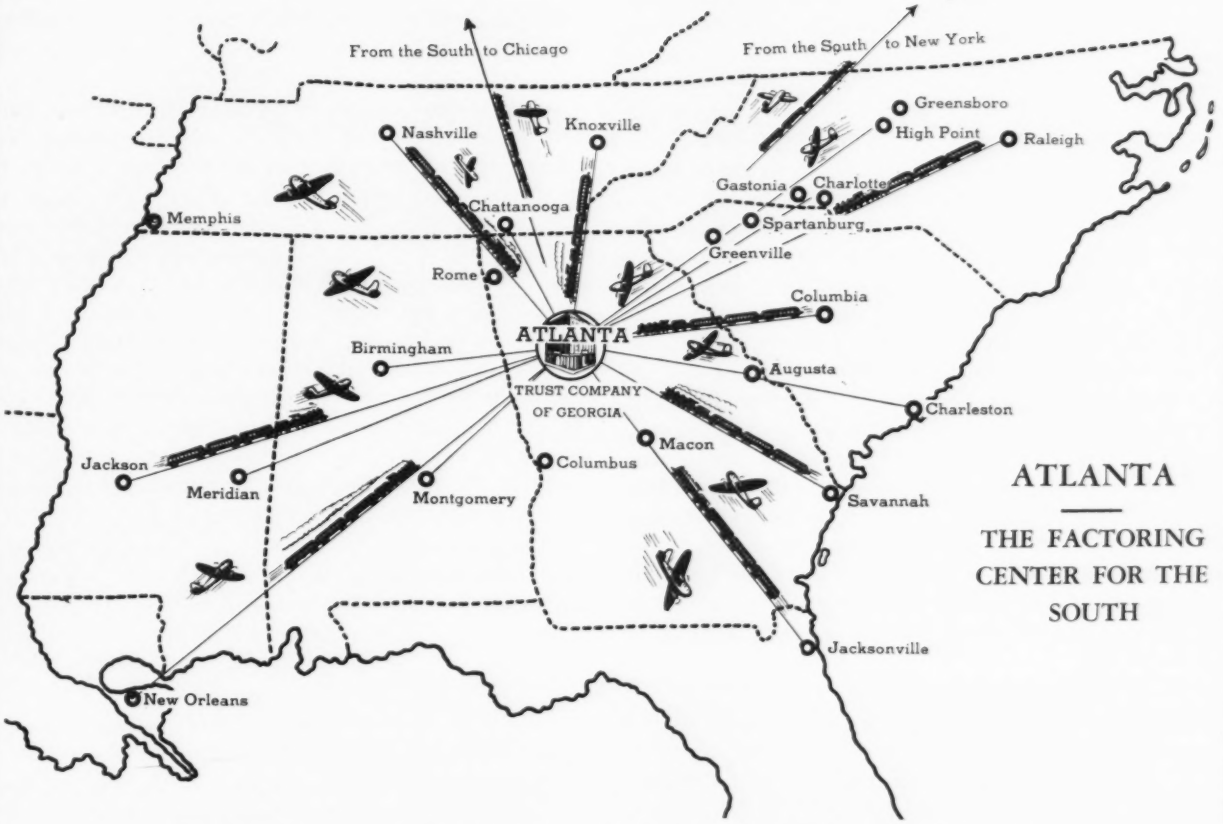
Although opposing the cotton export subsidy, the textile industry went on record to the effect that if the subsidy was to be put into effect that before any step was taken to that end it was imperative that the industry be given immediate, automatic, and complete protection against any increase in imports of cotton goods processed from cotton of domestic or foreign growths. The industry requested that domestic cotton textiles, products, and cotton waste exported receive proportional benefits. And the industry also urged that a fixed rate of subsidy for the marketing year in preference to variable subsidy be adopted.

Cotton-Rubber Trade

On June 22 an agreement was signed in London which provided for the exchange of 600,000 bales of surplus American cotton for 175,000,000 lbs. of British rubber. Legislation granting the Government authority to dispose of cotton held under loans made to growers is now pending before the House Banking and Currency Committee. The barter agreement promises to be lost in the Committee unless it is rescued mighty quick. The trouble which has arisen in carrying out the agreement is a squabble over where the cotton is to be classed. Great Britain stipulated that the cotton should be classed at certain seaports which necessitated the concentration of a million and a half bales of cotton at seaports instead of interior warehouses where it is now held. Warehousemen revolted against losing cotton which nets them over $4,000,000 a year storage charges on the million and a half bales. The Government's plan was to restore a million and a half bales of cotton at seaports where Great Britain's agents could class and select the 600,000 leaving the balance at the seaports for disposal under other possible agreements.

This was a war preparatory measure, the signing of which brought great publicity to Ambassador Kennedy. The interesting thing about the agreement is that it actually meant that Britain would store that much cotton which in case of war could be utilized immediately without waiting for transportation. Unless an emergency arises the cotton is to remain in storage for seven years.

There's Money In Your Own Back Yard!



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The National Cotton Council announced new cotton research plans when they released the news that the Cotton Research Foundation (financed by the Mellon Institute) will become the research division of the National Cotton Council.

Cotton Research

Operating through multiple fellowships in the Mellon Institute of Industrial Research, the Foundation will continue its present exploratory program and in addition will handle all matters of scientific research arising out of activities of the National Council. In its three years of organized work the Research Foundation has gotten underway or has completed twenty-nine projects looking toward new uses for lint and seed products, many of which are being further developed for final commercial production. Further expansion of research projects is to be undertaken in colleges and universities where suitable projects are proposed and to the extent that available funds make possible.

Taking actual mill conditions in review, we find the textile industry clicking right along although it does not face immediate prosperity. Both grey cloth and yarn sales by mills have been moderate during the past month. The month's average was not up to May in production but surpassed June a year ago. Mill margins or the difference between the price of cotton and its cloth equivalent averaged about unchanged during early July. The average margin for June was 9.84 cents against 9.33 in May and 10.81 in June, 1938. The 10-year average June margin is 12.21 cents. Finished goods markets were active during the period.

Domestic mill activity decreased during early July but forwardings of cotton to domestic mills were only slightly smaller than the weekly average for June and well ahead of those for a year earlier. The census report placed June consumption at 578,000 bales against 605,000 bales in May and 444,000 bales in June 1938.

United States mill stocks decreased about 150,000 bales during June, and on June 30 totaled 1,020,000 bales against 1,410,000 bales a year ago. The five-year average mill stocks on June 30 was 1,230,000 bales.

General business seems to be on the uptrend. Retail purchases are moving toward a post-depression peak. Prices for raw and finished goods portray conditions favorable to a buyer's market. There is no doubt but that the seasonal activity in the textile industry is well up to normal and in some groups above normal. The print cloth actually has its curtailment plan in effect but the sales are limited to productions during a three month period of July, August, and September. Manufacturers of print cloth representing over 95 per cent of the looms on these fabrics have definitely affirmed the voluntary regulation plan. This is extremely encouraging as three months' work along this line can stabilize the print cloth industry toward looking at a prosperous fall selling period.

The big question in the minds of manufacturers today is whether goods being shipped out are going to the retail purchaser or going into wholesaler's warehouses.

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Some Interesting Figures on Cotton Consumption

The average lay person is inclined to make his own measurement of cotton consumption in terms of wearing apparel and articles of household convenience, but that isn't nearly all the story. Figures just issued by The Cotton-Textile Institute covering the consumption of cotton in manufacturing rubber products reflect the importance of industrial uses to the American cotton economy.

During the calendar year 1938 approximately 241,000,000 pounds of raw cotton were used in the manufacture of all types of rubber products. This is the equivalent of 504,200 bales of raw cotton and represents approximately 8½ per cent of the total cotton consumed in the United States.

The largest use is in tires; the cord fabric and square woven fabric for tires consumed approximately 397,500 bales of cotton. Rubber footwear used approximately 23,000 bales for uppers, linings, etc.

Other types of rubber products used 83,700 bales. Mechanical goods, such as hose, belting and matting, used 52,300 bales; rubberized fabrics, such as materials for raincoats, automobile top fabrics, tire covers, hospital sheetings, etc., used about 31,400 bales.

Roughly, figures indicate that about 40 per cent of cotton consumed in this country goes into wearing apparel, household uses, etc.; 40 per cent into industrial uses such as those mentioned, and the remaining 20 per cent into miscellaneous uses.

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Textile Drying Yields to Research Control

Hitherto a rule-of-thumb process, the drying of textiles promises to become a scientifically controlled operation in the opinion of those who have been interested in the research program conducted at the Bureau of Standards in Washington, D. C., under the direction of the United States Institute for Textile Research. Supported by contributions from the textile industry itself, this study entered its third year in July. A recent meeting of representatives of the contributing firms, held in Washington, revealed unanimous satisfaction with the course of the work and a desire to continue it for the following year.

The study embraces all types of textile materials, so that when the research is finished a manufacturer will know exactly what conditions to avoid in order to prevent damage to material in the drying process.

The practical aspects are already apparent. Important savings in time are indicated as well as definite improvement in the quality of the product and, of course, in the efficiency of the operation itself.

During the coming year, emphasis will be placed on the possibility of securing speedier and more economical drying of textiles which will result in further saving. In addition, major consideration will be given to improvements in drying conditions which will permit the valuable inherent properties of textiles—their flexibility, strength, softness, etc.—to be retained intact, and the material quickly dried and conditioned in one process so that it is in the best condition for subsequent manufacturing processes.

The contributing firms have exclusive right to the results of the study for a period of time. Actually this means that for a contribution of $150 per year, the contributing mill participates in a research costing a minimum of $5,000 a year. The Institute is now signing up contributors for the next year's program, which commenced on the first of July.

"These figures from Armstrong show that cork cots cost almost as much as the roll covering we're using. Why make a change?"
"You're talking about first cost, chief. It's after we switch to cork that our big savings begin."

Chief: What do you mean by "savings"? That's a pretty broad word.

Super: Well, as soon as we change over to Armstrong's Cork Cots we'll begin to get better running work, with fewer top roll laps and less end breakage. Furthermore, these new cots will turn out a more uniform product, and they'll do away with eyebrows almost entirely. We'll get less clearer waste, too.

Chief: Yes, but what about the cots themselves? How do we save on them?

Super: I was just coming to that. They won't cost us any more in the first place than the coverings we're using now. Then the savings will begin. First, the assembly is quicker and cheaper with cork cots. They'll last longer, because of the toughness of cork, plus the fact that we can renew each roll three or four times by rebuffing it.

Chief: All right, but what about this business of rebuffing—isn't that going to cost money?

Super: Only about half a cent a roll, Chief. Armstrong showed me figures from other mills that prove we can actually cut our roll covering costs by more than 50%.

Chief: O.K. Those figures look good to me, too. Let's start making a complete change-over to cork cots right away.

LET an Armstrong representative show you how *your* mill can improve yarn quality and cut production costs by a change-over to Armstrong's Seamless Cork Cots, the modern roll covering. He'll give you actual production figures of mills spinning your range of numbers on cork. Or write to Armstrong Cork Company, Industrial Division, Textile Products Section, 923 Arch Street, Lancaster, Pennsylvania.

ARMSTRONG'S *Extra Cushion* SEAMLESS CORK COTS

CORK PRODUCTS SINCE 1860

COMMENT on the Cotton Market

New Orleans, July 15, 1939

THERE WAS more interest and activity in the cotton market during the past month and much of the discount in contract values disappeared, reflecting confidence of the trade and speculative incline. Nevertheless the market was under pressure at times owing to some uneasiness as regards the foreign political situation, not only in Europe, but in the Far East as well. Spot values, compared with one month ago, show somewhat lower, yet remain at a good premium over contracts, due largely to the scarcity of "free" cotton, particularly of certain grades and staple.

Of late there was a good demand for finished goods, for raw cotton of desirable quality; general business advices were encouraging, the weather inland was unfavorable over much of the belt, due to too much rain, and the acreage planted to cotton as of July 1 was estimated at 24,943,000 acres. These features and prospects of a subsidy to stimulate exports during the new season, soon to open, were sustaining factors. And while climatic conditions in the cotton region have become better of late for progress of the growing crop and for holding the boll weevil in check, the market appears to be more responsive to the more encouraging trade prospects, not only at home but abroad as well, due to the great expenditures of funds in all leading countries of the world, especially in the United States, England and France, for army and navy expansion. Crops of grain and cotton in America may be smaller this year than they were last year, but reserves are large, and if an urgent demand develops it should make for much better business the coming fall and winter.

Business Gaining

Late press advices from New York state in part:

"Entering the second year of recovery from the 1937-38 business slump, some industries in the United States today were operating at record high levels. Consumption of raw materials and manufactured goods for many months, trade reports indicate, has been running ahead of production in some lines so that lower inventories have compelled resumption of buying."

Farm Products Boom Is Seen

Washington, July 17.—"Federal farm officials predicted today the European demand for American agricultural products would improve during the next few months, largely as a result of foreign military expansion.

"They reported marked improvement in industrial production and general economic conditions in countries which are important markets for United States farm products.

"This improvement, especially strong in Great Britain and France, is expected by officials here to be reflected in increased consumer buying power and a consequent larger demand for American cotton, lard, fruits, tobacco and grains.

"Official prediction for an upturn in agricultural exports came at a time when such trade was running 22 per cent in value behind a year ago.

"Farm officials believe an upward turn in agricultural exports this summer and fall would do much to strengthen a commodity price level which has been slipping under the influence of large supplies and favorable new crop prospects."

Failure of such favorable trade conditions, as seem to be in evidence now and for some weeks past, to attract better support to the markets, is probably due to apprehension of a possible showdown abroad soon.

There is no doubt of there being an under-current of bullish sentiment, and if war is averted, it would not be surprising to witness an old fashion bull movement in the commodity and security markets. Such a development would be a big lift to the farmer and merchant and in turn would be helpful to the already busy industrial districts because of the increased buying power of the masses that would come of such a thing coming to pass.

It is a long time that such encouragement has appeared in print, and may it become a reality; the offspring of peace and goodwill among nations.

CENSUS REPORT JULY 14, 1939

United States— Bales—	This season	Last season
Consumption of lint in cotton-growing States, June	490,000	376,000
Consumption of lint in New England States, June	72,000	54,000
Consumption of lint in All Other States, June	17,000	13,000
Consumption of lint in Cotton-Growing States, 11 months	5,367,000	4,499,000
Consumption of lint in New England States, 11 months	794,000	652,000
Consumption of lint in All Other States, 11 months	172,000	148,000
Consumption of lint in United States, June	578,000	443,000
Consumption of lint in United States 11 months	6,334,000	5,300,000
Mill stocks, June 30	1,021,000	1,412,000
Stock in public storage and warehouses, June 30	11,944,000	9,726,000
Stock in mills, public stg. and whs. June 30	12,965,000	11,138,000
Stock in mills, public stg. and whs May 31	13,545,000	11,633,000
Active spindles during June in Cotton-Growing States	16,381,000	16,200,000
Active spindles during June in New England States	4,777,000	4,341,000
Active spindles during June in All Other States	630,000	602,000
Active spindles during June in United States	21,788,000	21,143,000
Active spindles during May in United States	21,975,000	21,342,000

BRITISH BOARD OF TRADE REPORT FOR JUNE

Year—	1939	1938	1937
Exports of yarn, lbs.	9,000,000	8,000,000	14,000,000
Exports of cloth, yards	113,000,000	96,000,000	155,000,000

AMERICAN COTTON

August 1 to July 14— Bales—	This season	Last season
Brought into sight (marketed)	10,896,000	15,156,000
Exports from the U. S., including Canada	3,549,000	5,832,000
Spinners takings, world	11,246,000	11,658,000

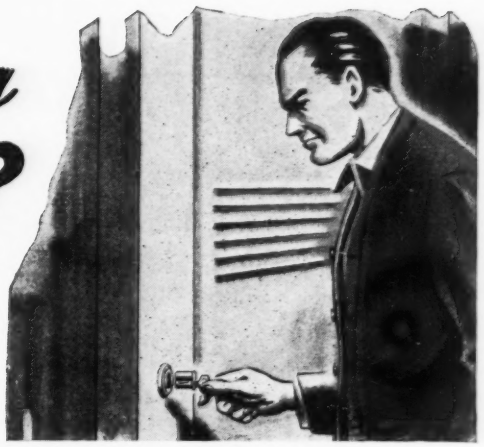
WORLD'S VISIBLE SUPPLY OF COTTON

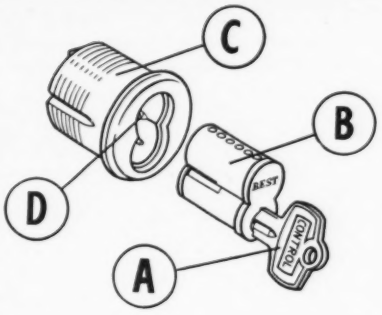
July 14— Bales—	This Year	Last Year
Stock at United States ports	1,926,000	2,462,000
Stock at 102 interior towns	3,567,000	2,679,000
Afloat to and at ports of Europe	398,000	1,236,000
Afloat to and at ports of Orient	104,000	117,000
World's visible supply of American	5,995,000	6,494,000
World's visible supply of Other kinds	2,156,000	2,453,000
World's visible supply of All kinds	8,151,000	8,947,000

Okamoto to Convey Silk Trade's Ideas

Recommendations and suggestions made by the American silk industry will be conveyed to the Japanese Government by Eitaro Okamoto, vice president of the Central Raw Silk Association of Japan, upon his return to Japan in mid-August. He has been visiting hosiery and weaving mills in this country and conferring with leaders in the American industry. His own observations here have convinced him of the need for continued close technical co-operation between the raw silk industry of Japan and the silk-consuming industries in this country. On his visits to mills he had an opportunity to see experiments being made with Nylon but he does not believe that as yet it offers a serious threat to silk.

How quick can you change a lock?





ONE KEY GIVES YOU CONSTANT, MILL WIDE CONTROL OF SECURITY... CUTS LOCK UPKEEP... INCREASES SAFETY

The Key is your Private Control Key (A). It will remove the Interchangeable Core (B) of any Best Lock on your properties from its housing (C). A slight turn and out it comes! With the same key another Core of different combination is quickly inserted. And there... without a moment's loss of security or costly replacement... you have all the protection a new lock can give. The removed Core is not lost. It is recombinated and used over again.

The Safety Set Screw (D) which holds a Best Lock in place is inside the Core housing and cannot be tampered with... an added safety feature!

IN TEN SWIFT SECONDS

New security for mill property if you are equipped with BEST UNIVERSAL LOCKS

Every Best Lock... and there is a type for every mill use... is equipped with the exclusive Best Interchangeable Core. This Core contains the pin tumbler mechanism and locking combination. It will fit *any* Best Lock in your mill.

When danger threatens... when keys are lost... when personnel changes ... you can remove a lock Core in a flash and replace it with another Core of different combination. Lost keys or those in unauthorized hands are immediately useless. Thus you quickly gain a new lock's security, without a new lock's expense... end danger to property before it strikes.

You can start equipping your plant inexpensively with a few Best Locks and gradually develop a master keying system that will include every type of lock on your properties... on gates, supply rooms, shipping and tool rooms, oil houses, offices, desks, cabinets, and lockers... *anywhere!* And the Interchangeable Cores of any of those locks will fit any other... *instantly changeable*... so that you keep authority *always exactly* where you want it.

May we show you how Best Locks can give you better protection, greater flexibility and, at the same time, cut your upkeep and replacement costs? You can do it without changing your present lock hardware. Write *today* for free copy of our illustrated Preview Catalog.

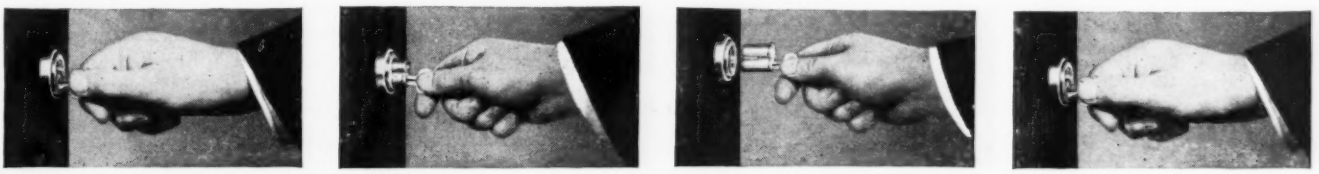
THESE MILLS ENJOY THE BENEFITS OF A BEST UNIVERSAL LOCKING SYSTEM

Many industrial plants have started with a few Best Special Stamped Padlocks (with Interchangeable Cores) and extended the positive CONTROL, FLEXIBILITY and ADDED PROTECTION of the Best Universal Locking System throughout. Among the mills which enjoy Best protection are: Cannon Mills Co., Mt. Vernon Woodberry Mills, Inc., Marion Mfg. Company, Ware Shoals Mfg. Company, Highland Mills... and others. To end *your* mill locking problems, write for full details... now!

BEST UNIVERSAL LOCK COMPANY, INC.
730 East Washington Street • Indianapolis, Indiana
REPRESENTATIVES IN ALL LEADING CITIES

☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆

INSERT CONTROL KEY, TURN 15 DEGREES, REMOVE CORE, INSERT DIFFERENT CORE, LOCK INTO PLACE, RENEWED SECURITY IN 10 SECONDS!



What the Southern Mills are Doing

Roy E. Martin and sons have purchased the Girard Mill and 90 houses of the Eagle & Phenix Mills at Girard, (Phenix City) Ala. It has not been announced what type of industrial will be located in the plant. The machinery in the Girard plant has been consolidated into the Columbus (Ga.) plant of Eagle & Phenix Mills.

Pacolet Mfg. Company, Mill No. 4, New Holland, Ga., will install a Sanforizing unit in a new one-story structure, 75x100 feet, being erected for the purpose. Operation of the new equipment will start about September 15, it is announced by Marshall C. Stone, vice-president and general manager of Pacolet.

Peerless Woolen Mills, Rossville, Ga., is constructing a block-long warehouse, one story in height, frame construction with sheet iron sides and composition roof. It will be used for storage of raw materials.

Officials of the Star Woolen Company, Cohoes, N. Y., have been inspecting the old Aycock Hosiery Mill building at South Pittsburgh, Tenn., with a view to locating a woolen mill in the South.

Property of the Grottoes Silk Mill, Inc., has been sold to the American Clifton Corporation, New York. The property includes the mill building, equipment, and four acres of land.

Work is progressing rapidly on the extension to the main building of the Benjamin Kahn Ribbon Company, Attalla, Ala. The weaving department will be moved into the new building.

Erwin Manufacturing Company, Huntsville, Ala., which was sold recently under court order to T. G. Melson, may be placed in operation again at an early date.

Parkdale Mills, Inc., Gastonia, N. C., are erecting an addition of 12,500 square feet of floor space, which will be used as an up-to-date finishing plant and storage warehouse.

A proposal has been placed before the courts to reopen and either lease or operate the plant of the Cowpens (S. C.) Mills.

Citizens of Jacksonville, Ala., have pledged their support and cooperation in an effort to re-open the Profile Cotton Mills of that city.

Southern Mills, Inc., Atlanta, Ga., will build an addition to its plant.

New Textile Publications of Interest

Allis-Chalmers Mfg. Co., Milwaukee, Wis. Bulletin B6012, describing the complete line of Vertical-Lift Metal Clad Switchgear. Indoor Cubicle Type Switchgear Bulletin B6011, including dimension sheets, wiring diagrams and installation views. Bulletin 6010, giving list prices, dimensions and applications of a-c and d-c motors, as well as typical electrical and mechanical variations for special purposes.

The Bristol Company, Waterbury, Conn. Several new bulletins descriptive of products of the company. No. 525 on humidity recorders and controllers; No. 528 on strip-chart pyrometers; No. 529 on strip-chart resistance thermometers; No. 512 on the company's system of coordinated process control, and No. 538 on the new portable voltmeter built especially for outdoor survey work.

The Manhattan Rubber Manufacturing Division of **Raybestos-Manhattan, Inc.**, Passaic, N. J. New V-belt data book for machine designers and engineers on V-belt drives. In two parts, covering standard drives eliminating the necessity of working out calculations, and sheave factors for designing new or special drives. Contains belt comparison tables and other general information.

The Permutit Company, 330 W. 42nd St., New York City. Bulletin No. 2225 on the company's pressure filters, the first public offering of the deflector plate distributor featured in the company's type F. filters. Also information on the new expansible strainer heads and the group control of filter units.

The Carlyle Johnson Machine Company, Manchester, Conn. Catalog descriptive of the Johnson friction clutch. Mentioned are standard type clutch with metal to metal frictions, and super type with Raybestos faced expansion ring, this to run dry where such a method of driving is required.

General Electric Company, Schenectady, N. Y. Two bulletins, GEA--137D descriptive of low-speed synchronous motors of the Type TS; and GEA-1960A descriptive of low-speed synchronous generators of the Types ATB and ATI. Order by number.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa. Booklet F-8484 descriptive of totally enclosed loom motors of one-half to two horsepower, for 220, 440, or 550-volt power supply, 60 cycles, two and three phase.

South Bend Lathe Works, 425 E. Madison St., South Bend, Ind. Bulletin No. 43, recently issued, illustrating and describing the three new models of the workshop precision lathe, and the new improvements which have been added.

United States Rubber Company, Mechanical Goods Division, 1790 Broadway, New York City. "Belting Biographies", a 36-page booklet describing the company's complete line of transmission and conveyor belts.

Rohm & Haas Company, Inc., 222 West Washington Square, Philadelphia, Pa. The first of a series of bulletins on the Rhoplex resins, this one having as its theme "clear as a crystal".

The Thompson Electric Company, 1101 Power Ave., Cleveland, Ohio. Catalog No. 39 on the company's lamp lowering hangers, shock absorbers, and accessories.

Rohm & Haas Company, Inc., 222 W. Washington Sq., Philadelphia. "Rhoplex Resins Are Tough", second in a series of pamphlets describing the characteristics of these products.

Niacet Chemicals Corporation, P. O. Box 460, Niagara Falls, N. Y. The ninth edition of the general catalog of the company.

Additional Obituary Items

(*See also page* 98)

HERBERT SMITH, 69, New Bedford, Mass., passed away the latter part of June. At one time he was superintendent of the Whitman Mills and later served in a similar capacity at the Davol Mill, Fall River, Mass.

JOHN R. HART, former president of the Mercerizers Association of America and a member of the board of directors of the Hampton Spinning Mills, Clover, S. C., passed away during June at his home in York, S. C.

HOMER LORING, 63, Ashland, Mass., widely known as a New England textile industry reorganizer, passed away in New York on June 20.

WALTER F. CONNALLY, 40, assistant secretary of the Textile Banking Company, passed away recently. He had been with the company since 1920, but had resigned earlier this year because of ill health.

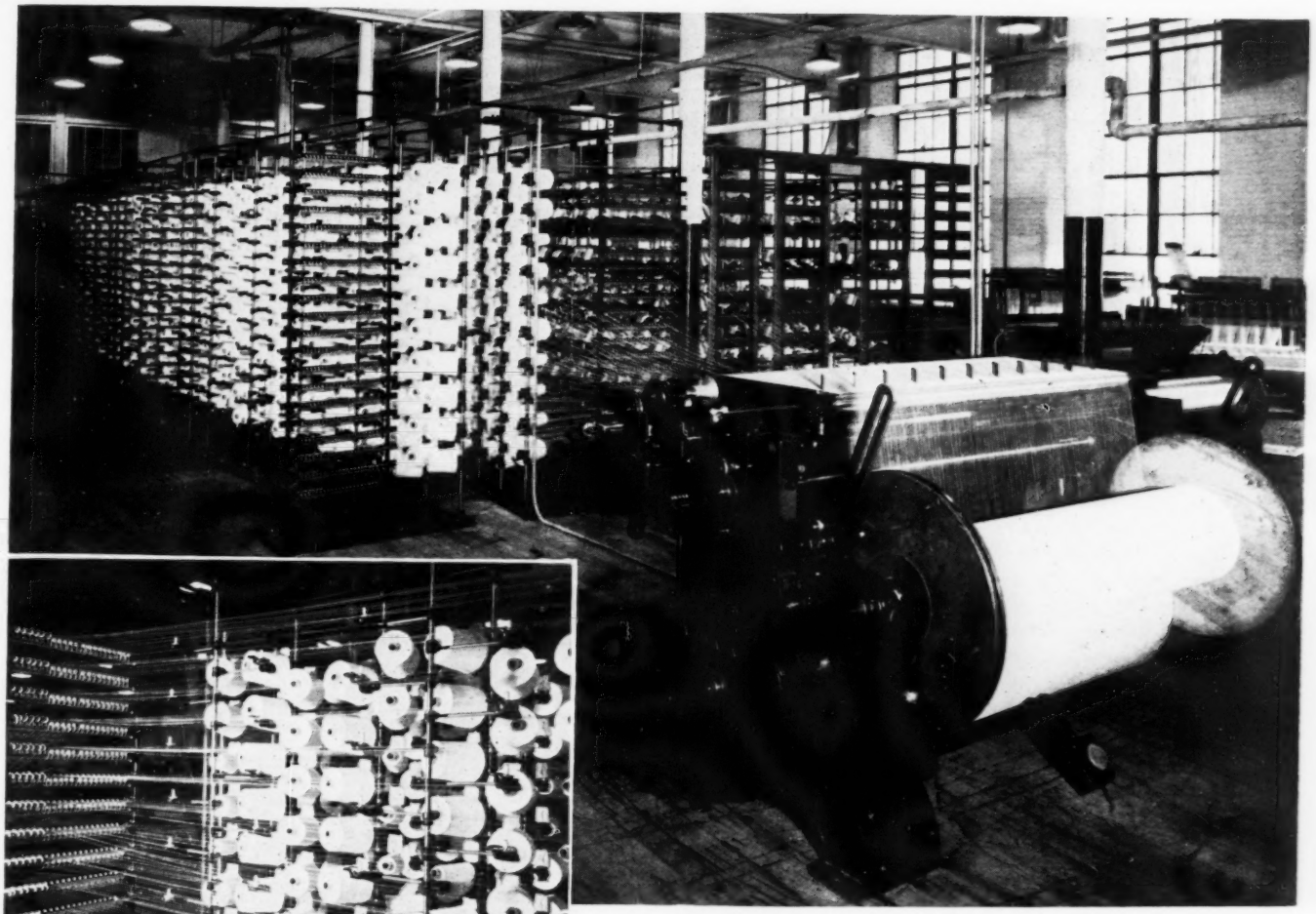
I. M. PEARLMAN, president of the Wyoming (Pa.) Weaving Company, passed away recently.

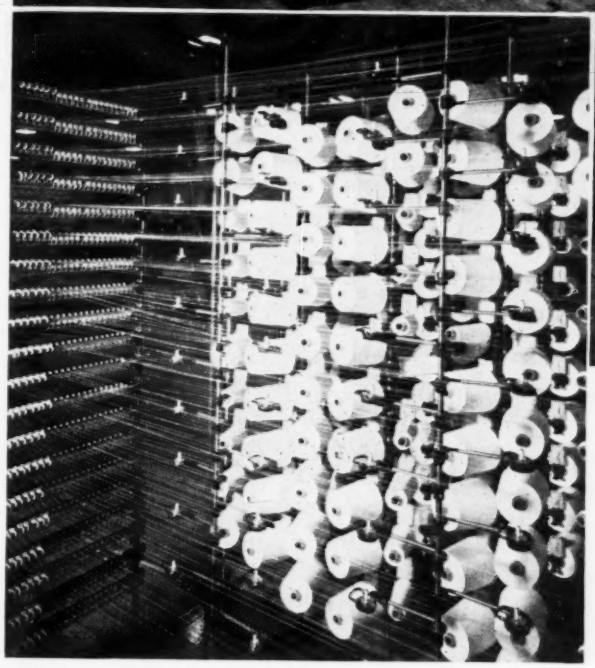
EARLE N. WOODRUFF, 64, for the past 25 years office manager of the Fulton Bag & Cotton Mills in New Orleans, passed away recently after a year's illness.

JOSEPH F. CANNON, 62, retired textile manufacturer of Concord, N. C., passed away June 21 at Hot Springs, Ark. At the time of his death he was vice-president of the Davidson (N. C.) Cotton Mills and a director of the Wiscassett Mills Company, Albemarle, N. C.

SIDNEY COOLIDGE passed away recently at his home in Concord, Mass. He was a former president of the Lowell Bleachery-South and of the National Fabric and Finishing Company, and former treasurer of the Stark Mill, Manchester, N. H.

FRANK W. GURRY passed away, after a lingering illness, on Sunday, July 9, at Aurora, Ill., where his brother, ELLIS T. GURRY, is president of Aurora Cotton Mills. The late Mr. Gurry had in past years been active in the textile industry, having been superintendent and executive of some of the prominent mills both North and South.





Illustrated above is Cocker High Speed Section Beam Warper with HORIZONTAL TYPE MAGAZINE CONE CREEL and ELECTRICAL EYEBOARD STOP MOTION. This equipment is being used to warp fine denier acetates as well as the heavy rayon yarns. Tension on yarn is secured by dead weight, using ground hard chrome-plated washers giving an even tension on all ends in the warp.

Creel is arranged so operator can tie in reserve cones quickly and easily.

At left is close-up view of section of creel and electrical eyeboard stop motion. Stop motion is located at apex of creel and working in connection with the magnetic brake on motor of machine instantly stops machine for broken end, affording opportunity to secure and tie broken end before getting on to the beam.

WARPING AND SIZING MACHINERY FOR RAYON AND COTTON YARNS

WRITE OR WIRE US YOUR INQUIRIES.

COCKER MACHINE & FOUNDRY CO.

Main Office and Works

GASTONIA, N. C.

Northern & Canadian Repr: J. S. Fallow & Company, New Bedford, Mass.

New Textile Equipment and Materials

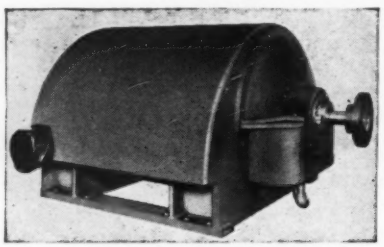
New Transformers

Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., has made available two new indoor dry-type current transformers, weighing only 8 pounds and designed strictly in accordance with Edison Electric Institute standards. They are rated at 200 and 400 amperes, 600 volts, and 600 amperes 600 volts. Design of the units permits long range accuracy as they withstand 150 per cent normal current continuous operation without exceeding 55-degree C. temperature rise with a 40-degree ambient. These transformers are entirely interchangeable with other transformers designed to meet the Edison Electric Institute specifications.

◆

Heavy Duty Induction Motor Has Noise Reduced

Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., has a new design for 3600 r.p.m., 600-3000 hp. induction motors which features quiet operation with minimum windage noise and radio frequency-tested insulation. Bearings for the new apparatus are combination oil ring and



Induction motor

forced-lubricated. The wide grooved rings provide lubrication for emergencies and during interruptions that might occur to the forced lubrication system. Particularly adaptable to centrifugal pump and compressor drives where reliability and low maintenance are important, these motors are built so that they may be started at either full or reduced voltage.

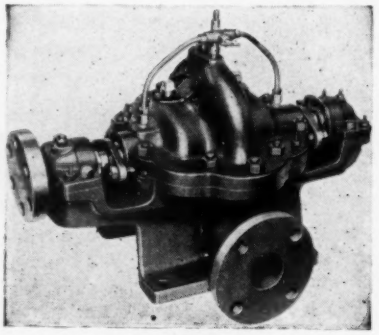
◆

Magnet to Remove Iron in Cotton Stock

Dings Magnetic Separator Company, Milwaukee, Wis., has developed a rectangular magnet designed to remove iron from the cotton in passing from the picker to the card. It is understood that the magnet is in use in several plants already, where it is meeting with success.

Ball Bearings Standard Equipment on Allis-Chalmers Pumps

Allis-Chalmers Manufacturing Company, Milwaukee, Wis., has announced the inclusion of ball bearings as stand-



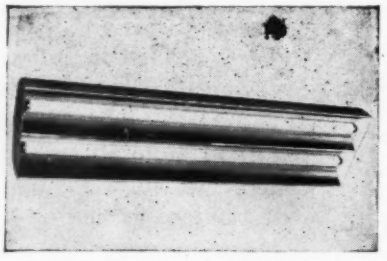
Ball-bearing pump

ard equipment on nearly all its line of single stage centrifugal pumps where peripheral speeds are not excessive and where the quality of the pumps are not jeopardized thereby. Since many purchasing engineers prefer sleeve bearings these bearing housings are designed so that either type of bearings may be accommodated.

◆

Fluorescent Luminaires

Westinghouse Electric and Manufacturing Co., East Pittsburgh, Pa., have developed a new fluorescent lighting unit for general or supplementary industrial lighting applications where an efficient, low brightness, extended source is required. It is available in single and two-lamp units; a steel housing completely encloses reflectors, sockets and controls. The reflecting



Fluorescent lights

surface has a specular finish for the concentrating type two-lamp unit and a diffuse finish for the spread type single-lamp units. All housings, except on the 24-inch units, are provided with two-point suspension for attaching to one-half or three-fourths-inch conduit.

The high efficiency of the fluorescent lamp, it is pointed out, results in considerably lower heat radiation for a desired foot-candles.

Photoswitch in Textiles

The use of the Photoswitch, the electrical eye control, manufactured by Photoswitch Incorporated, Cambridge, Mass., is being used in the textile industry with several helpful applications. It is applied to warpers, dryer guides on tenters, etc. It works on the principle of the photo electric cell. The device is simple in construction and positive in operation. It is furnished in dust-proof, water-proof housing and is readily installed in any location. The device is said to contain no sensitive parts.

◆

The "Skraptrap"

Breuer Electric Manufacturing Company, 5100 N. Ravenswood Ave., Chicago, has developed an attachment called the "skraptrap", to be used in

The "Skraptrap" in use

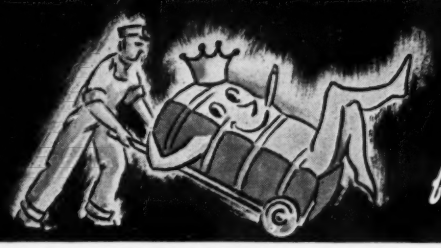
connection with the Tornado portable electric blower when it is being used for vacuum cleaning. The new device collects the small objects that are unavoidably drawn into the nozzle, thus preventing bolts, nuts, screws, nails, etc., from reaching and injuring the suction fan blades, while the dust, dirt and lint are readily by-passed into the dust bag. The "skraptrap" may be used to collect and salvage small parts or metal particles that would otherwise be irrecoverable. Valuable waste material may thus be reclaimed from accumulations about benches or machines or during any routine operation of the vacuum cleaner.

◆

Change of Address

The Detroit sales branch of U. S. Rubber Company and of U. S. Tire Dealers Corp., has moved from its former location on East Jefferson Ave., to 5850 Cass Ave. All main divisions of the company, including footwear, mattress, clothing, mechanical rubber goods, insulated copper wire and cables, and general products, are now located in the new quarters.

AMERICAN *Pressed-Steel* COTTON TRUCKS



A Royal Ride for King Cotton

The actual experience and requirements of important truck fleet operators dictated the design of "American" Cotton Trucks. Every user is unanimous in his praise . . . and everyone reports these four important savings:

1. **More bales moved, per boy—and with less fatigue.**
2. **Handling costs are materially reduced.**
3. **Costs of repairs and idle equipment are eliminated.**
4. **Sturdy, streamlined pressed-steel construction makes it possible for these trucks to return their cost yearly in longer life without maintenance expense.**

Smart buyers are getting more loads per trucker and eliminating floor maintenance costs by using rubber-tired, roller bearing wheels—at small extra cost.

YOU CAN SAVE WITH "AMERICANS" ON ALL MATERIALS HANDLING

"American" Pressed-Steel Hand Trucks definitely reduce operating costs by speeding up your truckers and enabling them to do more work without additional effort.

Maintenance costs are likewise reduced because the pressed-steel construction of "Americans" gives them years of extra life and practically eliminates repairs.

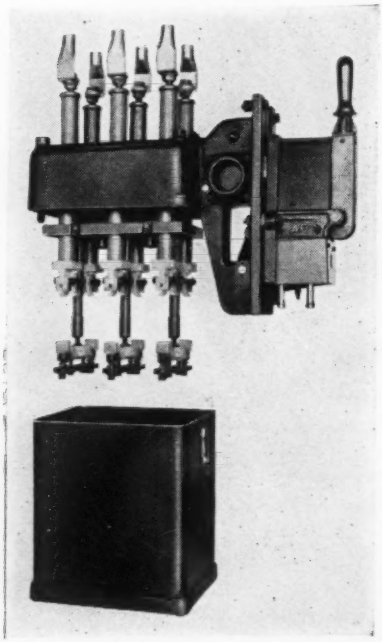
Regardless of your individual handling needs, you may depend upon it that there's an "American" Pressed-Steel Hand Truck specifically designed to fill them. Yet in spite of their many points of superiority, "Americans" cost very much less per year of service than ordinary trucks. Write today for our newest catalog giving complete specifications and prices.

AMERICAN PULLEY CO. · 4200 WISSAHICKON AVE. · PHILADELPHIA, PA.

AMERICAN PRESSED STEEL HAND TRUCKS

New Switchboard Oil Circuit Breaker

Allis-Chalmers Mfg. Co., Milwaukee, Wis., announce the development, by their Boston works, of a new switchboard type oil circuit breaker, for application to central station and industrial service. In this 50,000 k.v.a. interrupting rating breaker, the three poles are arranged one behind the other as viewed from the front end; the necessity of crossing the leads in certain applications of open and enclosed type switchboards is eliminated, and the breaker is adaptable for replacing obsolete breakers of the same arrangement, as existing bus and feeder connections may be retained.

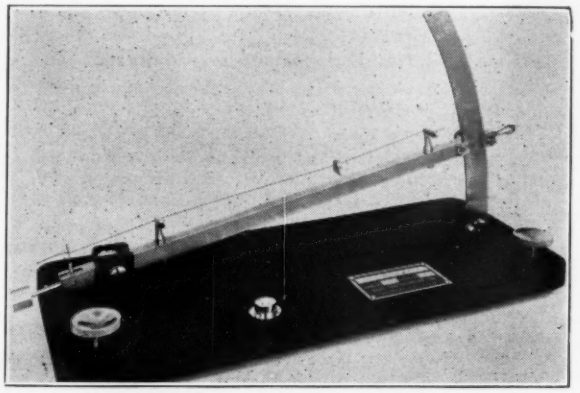


Circuit breaker

◆

Saxl Friction Tester

Saxl Instrument Company, Inc., 42 Weybosset St., Providence, R. I., has developed a friction tester machine. It is known that the friction of yarns and threads is of importance in every textile process. Textile chemicals change the surface friction and thus the operating characteristics of yarns. Therefore, with the new machine, the friction of the yarns can be determined, and comparative friction tables set up for yarns before and after treatment or processing. The apparatus consists of a precision holder for the thread which can be adjusted at different angles. These can be read on the protractor on the right side of the machine; the yarn is held under uniform tension on top of the beam and a rider with a standard eyelet is placed upon the yarn. By lifting the beam with the aid of the handle on the right the angle can be read directly at which the rider starts to glide along the yarn. If the thread is well oiled and smooth, the rider gets going at a small angle while if the yarn is rough or covered with materials with a high coefficient of friction a larger angle is necessary.



Friction Tester

◆

Lock with Interchangeable Core

The Best Universal Lock Company, 730 East Washington St., Indianapolis, Ind., has made available a lock with an exclusive patented interchangeable core which can be removed and recombinated, or replaced with another core of different combination. The change is easily and quickly made and it is not necessary to remove and change an entire lock when it is found necessary to change the combinations of the locks in the dressing room or on tool boxes, cabinets, etc. All of the company's locks may be keyed individually, keyed alike, master keyed, or grand master keyed with other Best locks of any other type.

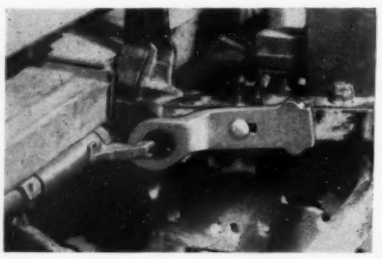
Protection Rod Oscillator

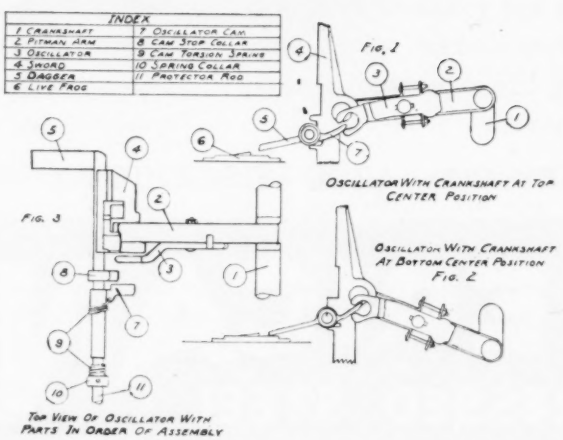
J. E. McCarvey, P. O. Box 366, Griffin, Ga., has developed a device which is said to relieve the pressure on the shuttle when being picked from the box. There is no spring pressure on the protection rod at any time except when the crankshaft is moving downward from back center through bottom center to front center. At all other times the protection rod is allowed to float freely in its bearing. This new device is the Protection Rod Oscillator which puts tension on the binders through pressure on the protection rod at the proper time. The device is simple in design and when once set properly stays put, all the bearing surfaces being chilled to prevent wear.

This protection rod oscillator is said to reduce power, save picker sticks and pickers, permit binders and shuttles to wear longer, and reduce the general maintenance cost of the loom through the requirement of less power for running the loom.

The new device is manufactured exclusively by the West Point Foundry and Machine Company, West Point, Ga., and further information may be secured from this source.

The protection rod oscillator is simple in design and easily and quickly installed. The picture shows the device in place on a loom, while the drawing explains its operation at different positions of the crankshaft . . .

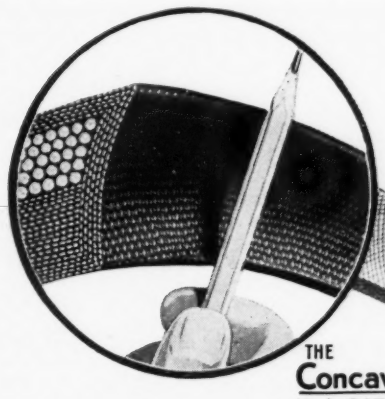




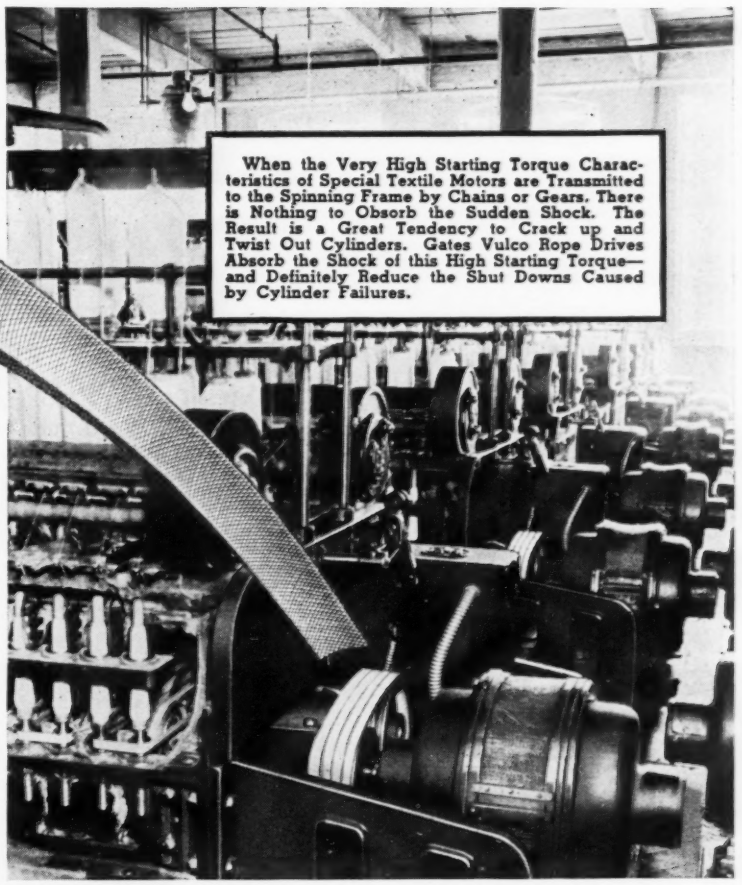
◆

Brown Secretary of Commerce of Pennsylvania

Richard P. Brown, chairman of the board of the Brown Instrument Company and vice-president of Minneapolis-Honeywell Regulator Company, has been appointed by the governor of Pennsylvania as the Secretary of Commerce of this commonwealth. Mr. Brown has been interested for some years in industrial development of Pennsylvania, with the objective of increasing the number of jobs in private industry. This newly created department is an aid to the state's industries in their expansion and development.



THE **Concave Side** IS A GATES PATENT



When the Very High Starting Torque Characteristics of Special Textile Motors are Transmitted to the Spinning Frame by Chains or Gears. There is Nothing to Obsorb the Sudden Shock. The Result is a Great Tendency to Crack up and Twist Out Cylinders. Gates Vulco Rope Drives Absorb the Shock of this High Starting Torque—and Definitely Reduce the Shut Downs Caused by Cylinder Failures.

SAVE MONEY on BELTS and POWER....

With This SIMPLE PATENT!

What Happens When a V-Belt Bends

FIG. 1

FIG. 2

When *any* V-Belt bends, its top is under *tension* whereas its bottom is under *compression*. Naturally, the top grows *narrower*, the bottom *wider*. Figure 1 (on the left) shows this shape-change in a straight-sided V-belt. Note the out-bulge of the sides. You can actually *feel* this side-bulge if you grip a bending V-belt in your fingers as in the photo above.

Now look at figure 2 and note how the patented concave side exactly *corrects* the previous distortion—*eliminates* the side-bulge—gives the bending belt a shape that *precisely fits* the sheave groove.

Two substantial savings result: (1) No side-bulge means uniform side-wall wear—*longer life!* (2) Full side-wall grip on the pulley means *more* grip—heavier loads without slippage—belt wear reduced—power used, *not wasted*.

The Gates Vulco Rope is the only V-belt built with the patented concave side.

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

CHICAGO, ILL., 1524 South Western Ave. HOBOKEN, N. J., Terminal Building BIRMINGHAM, ALA., 1631 1st Ave., S. LOS ANGELES, CAL., 741 Warehouse St.

DENVER, COLO., 999 South Broadway DALLAS, TEX., 2213 Griffin Street PORTLAND, ORE., 1231 N. W. Hoyt St. SAN FRANCISCO, CAL., 2700 16th St.

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

George Henderson Discusses Credit Men's Requirements

At a recent meeting of the Atlanta Textile Club, George W. Henderson, manager of the factoring division of the Trust Company of Georgia, Atlanta, spoke on the present-day requirements and qualifications of a textile credit man. He pointed out that in past years, when the more compact nature of the business structure permitted first-hand knowledge as to investment, progress, and personnel, the matter of credit work was relatively simple. Rapid business expansion, however, together with the more complex nature of business, now requires the credit executive to be a student even of the effects and influences of international occurrences, governmental policies and influences, tax obligations, market movements and the general economic effects.

These developments, Mr. Henderson brought out, have also produced the need for closer co-operation between the credit and sales departments. "The credit department has a serious responsibility to the sales department," he said, "for the application must not be confined to a mere negative or affirmative decision on an individual order, but, on the other hand, careful study should be given to the possibility of expanding the use of your products, taking into consideration proper safeguarding of your principal's interest."

The Atlanta Textile Club, recently organized, is composed of men connected with the sale and distribution of textile products with headquarters in Atlanta. It meets on the first Monday of each month, at luncheon at the Piedmont Hotel, and interested visitors are welcome. Garnett C. Robey, of Riverside & Dan River Cotton Mills, is president of the club.

◆

Johnson Joins Quaker Chemical Products Corp.

Albin Johnson has joined the technical development staff of Quaker Chemical Products Corp., Conshohocken, Pa. Mr. Johnson, an American citizen, received his technical background abroad, being a graduate in chemical engineering of Oslo (Norway) university. He has been vice-president of Pierce-Johnson Laboratories, doing development work in textile oils and plasticizers; later he was connected with General Plastic Company on resin development and plastics, and the research staff of Duffy Silk Company and E. F. Houghton & Co. He will specialize in the hosiery field and the application and development of products for that industry. Recently he has been developing, in conjunction with Gotham Silk Hosiery Co., the use of an entirely new product for direct knitting, to be announced shortly, according to the Quaker company.

◆

O'Neil General Manager of Link-Belt Indianapolis Plant

Frank S. O'Neil, who has been with the Link-Belt Company for 33 years,

Mr. O'Neil

has been appointed general manager of the company's plants in Indianapolis, of which he has been assistant manager for the past 7 years.

◆

A. B. Moss, Jr., Joins Barnes Organization

A. B. Moss, Jr., has resigned as general manager of Whitney (S. C.) Manufacturing Co. to become associated with Barnes Textile Associates, of 10 High Street, Boston, Mass., as southern manager. This firm is specializing in consulting textile work, including cost control and labor analysis. Mr. Moss has established headquarters, effective August 1, at 1409 Johnston Building, Charlotte, N. C.

Prior to going with Whitney several months ago, Mr. Moss had been connected with Whitin Machine Works' Charlotte office. Previously he had been assistant agent of the Bemis Bro. Bag Co., Talladega, Ala., and the Merrimack Mfg. Co., Huntsville, Ala.

◆

Thomas Truck & Caster Co. Acquires Sippel Corp.

Thomas Truck & Caster Company, 3890 "K" St., Keokuk, Iowa, has acquired the business of the Wm. H. Sippel Corporation of South Bend, Ind., well known manufacturers since 1925 of truck casters, floor trucks, industrial trailers, and skid platforms. The Sippel products will be combined with the Thomas line of casters and trucks, and all production will be carried on in the Keokuk plant. The machinery and equipment at the South Bend plant has been installed at Keokuk, increasing production facilities for building the larger line of products. The superintendent of the Sippel plant has joined the Thomas organization.

◆

Cooper Sales Co. to Represent American Eng. Co.

American Engineering Company Philadelphia, Pa., manufacturers of Lo-Hed monorail electric hoists has announced the appointment of A. C. Cooper Sales Company, 220 E. 42nd St., New York City, as sales representatives for metropolitan New York, Long Island, and northern New Jersey. Julian Florandin is now associated with this company.

◆

Melot Represents American Paper Tube Co., in North Atlantic

Earl D. Melot has become associated with the American Paper Tube Company, Woonsocket, R. I., as sales representative in the North Atlantic territory, making his headquarters at 322 North 15th St., Allentown, Pa. Mr. Melot will handle the entire tube, quill and bobbin line of the company, as well as the products of the Shambow Shuttle division. He has been associated with the textile industry for more than 25 years and during the last 15 years has been superintendent of several well known mills in New England and Pennsylvania.

◆

Further Identification of Durene Yarn

Inasmuch as Durene yarn must be a combed yarn and must be a ply yarn also, it has been decided that all future printings of Durene identification stickers or tickets offered by the Durene Association of America will read "2 Ply Mercerized Combed Cotton" instead of simply "2 Ply Mercerized Cotton Yarn" as formerly.

◆

Aridye Opens Greenville Office

The Aridye Corporation, Fair Lawn, N. J., has announced the opening of a new office at 201 Allen Building, Greenville, S. C., with C. M. Robbins in charge. Also associated with this office are W. B. DePass and C. H. Patrick, the latter at one time superintendent of Union Bleachery and more recently connected with E. F. Houghton Co., Philadelphia.

Your CALENDER DESERVES THE BEST

THE CALENDER ROLL WITHOUT A SUPERIOR — T F M Textile Co.

THE ROLL WITHOUT A SUPERIOR

Specify Textile

CALENDER ROLLS

made with 100 YEARS EXPERIENCE

NEW AND REFILLED ROLLS
COTTON · HUSK · COMBINATION · PAPER
FOR ALL CALENDERS

The Textile-Finishing Machinery Co.

New York Office
50 Church St.

Southern Office
Johnston Bldg., Charlotte, N. C.

Providence, R. I.

J. Fred Welch Represents Lullwater Supply Company

Lullwater Supply Co., Norfolk, Va., representatives of the Fiske Brothers Refining Co., Newark, N. J., and other concerns, has announced the appointment of J. Fred Welch, of Charlotte, N. C., as textile salesman in South Carolina.

◆

American Associated Consultants Appoint H. L. Smith as Representative

American Associated Consultants, Inc., 11 West 42nd St., New York City, have announced that H. L. Smith, First National Bank Building, Chicago, Ill., has been engaged as their western associate. Mr. Smith and his staff have for many years specialized in merchandising, accounting, appraisals, and general reports for financial and underwriting purposes. His new connection will join these services with the activities of the other organization in job evaluation, base rate determination, labor and equipment utilization, and other management problems. Douglas S. Keogh, John J. Skelly, Paul O. Merrill, Harry B. Craft of Atlanta, and J. M. Cook—all formerly with the Charles E. Bedaux Corp., are officers of the American Associated Consultants, inc.

◆

Marquisette Curtains Now Sanforized-Shrunk

The first line of Sanforized-shrunk marquisette curtains has been introduced by Fall River (Mass.) Curtain Co. Shrinkage in the curtains is guaranteed within 1 per cent, as against an average of 14 per cent shrinkage previously, the manufacturers point out in a recent announcement.

Clifton Watson Buys Litchfield Shuttle Co.

Clifton E. Watson of Worcester, Mass., has purchased the entire machinery and equipment of the Litchfield Shuttle Company, Southbridge, Mass. A new corporation will be formed and operations resumed shortly. Mr. Watson, who was vice-president and general manager of the Watson-Williams Mfg. Company for 17 years, recently resigned that position to become general sales manager of the Litchfield Shuttle Company. His present address is Box 110, Southbridge, Mass.

◆

Miller Joins Hercules

N. Judson Miller, for several years a broker for textile chemicals and supplies in the South, has joined the sales staff of the Providence Drysalters Division of the Hercules Powder Company, Inc., and will represent the company in the Carolinas. Mr. Miller has headquarters at the Naval Stores Department of the company, located at 615 Johnston Building, Charlotte.

◆

Walker Electrical Company Re-Organized

Walker Electrical Company, Atlanta. Ga., has announced some important changes in its organization structure. This company, a leading electric contracting firm for many years, has been headed by Ralph M. Walker as president, and K. D. White, of Columbus, Ga., as vice-president. During recent years, the company, in addition to its electrical contracting work, has built up a manufacturing business, making lighting panels, service switches, cutout and junction boxes and aluminum cabinets of all kinds. Effective June 30, 1939, the Walker Electrical Company was incorporated as a separate manufacturing business, and the electrical contracting business transferred to a new company known as the White Electrical Construction Company. Mr. Walker is president, and T. J. Fleischer vice-president and sales manager of the Walker Electrical Company; and K. D. White is general manager of the White Electrical Construction Company. The relations between the two concerns will be the same as those between Walker Electrical Company and any other contractor. The sales policy of the Walker Electrical Company is to sell its products through the recognized electrical jobbers.

◆

Du Pont Takes On 150 Technical Grads

Approximately 150 new graduates of American technical school have joined the Du Pont Company during the summer. Collectively, they represent more than 45 universities and colleges, including many of the country's leading institutions of higher learning. They come from most of the states and are about evenly divided between large cities and small communities. If the next 13 years follow the precedent set by the last 13, about three out of every four of the group will still be in the employ of the company in 1952, at which time many of them will be at work on projects and products now unknown.

◆

Mt. Holly Mfg. Co. Now Makes Belt Dressing

The Mount Holly (N. C.) Manufacturing Company, makers of steam, water and hydraulic packings, has begun manufacturing belt dressings for leather and rubber belts.

◆

Diehl Opens Charlotte Office

Diehl Manufacturing Company, the electrical division of The Singer Manufacturing Company, and pioneer manufacturers of electric motors, generators and ventilating equipment, has opened an office at 617 Johnston Building, Charlotte, N. C. James H. Lewis is in charge of this office.

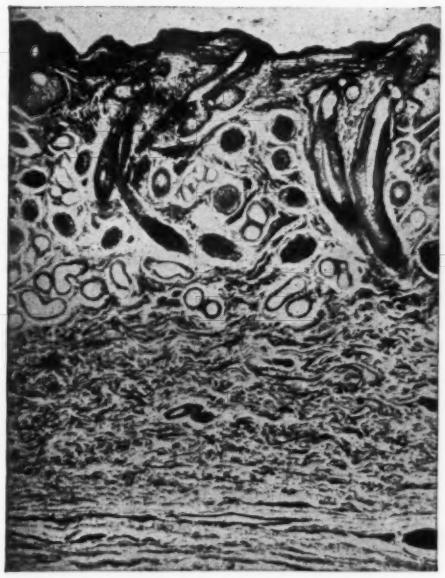
◆

Columbus Mills Open Direct Selling Offices

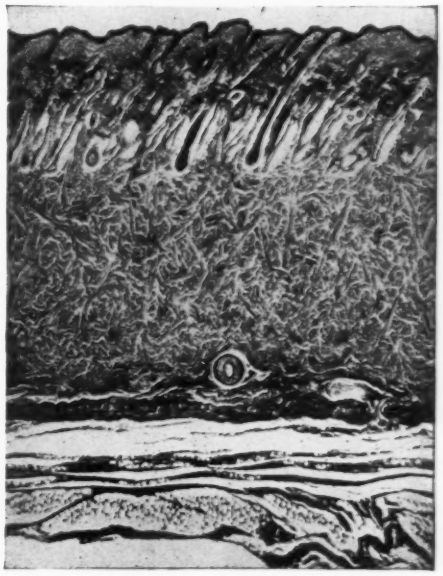
Eagle & Phenix Mills and Bradley Manufacturing Company, Columbus, Ga., opened direct selling offices on July 1 at several cities distributed over the United States. The main office is at 40 Worth St., New York City, with branch selling offices at Chicago, Philadelphia, Baltimore, New Orleans, St. Louis, and Atlanta. These mills manufacture a wide variety of plain and fancy fabrics, standard, and specialty yarns.

● *The new textile building at N. C. State College, Raleigh, N. C., shown above, will be ready for occupancy in September. It is a four-story building, fireproof, T-shaped structure, with 75,000 square feet of floor space. Recent contracts for equipment for the new building amounted to more than $40,000. One firm is to transfer the modern equipment in the present textile building. The Bahnson Company is to furnish a complete humidifying system for the weaving department, and Parks-Cramer Company is to supply one for the yarn manufacturing departments. A complete woolen unit will be installed by Davis & Furber Machine Co.*

WHY HAS GOOD LEATHER REMAINED THE IDEAL ROLL COVERING FOR OVER 100 YEARS?



MAGNIFIED CROSS SECTION OF SHEEPSKIN



MAGNIFIED CROSS SECTION OF CALFSKIN

Briefly the answer is that it is the ONLY material that can CONSISTENTLY pass the 12 POINT TEST under ALL of the great variety of conditions encountered at different times in cotton spinning.

Note that leather has a natural, positive drafting surface which does not require excessive weight to be effective. This surface is leveled out for uniform drafting by calendering, but is not destroyed.

Also note that the architecture consists of numerous interwoven fibres separated by minute spaces. Both the fibres and the spaces can be compressed, thus providing a dual cushion. Furthermore, pressure at any given point is distributed over the neighboring fibre structure, because of the interdependability of the fibres. That is why leather is never permanently flattened or fluted, when the spinning frames are idle, and why its rebound is almost immediate, when pressure is removed.

THE 12 POINT TEST
GILLEATHER Can Pass on All 12 Points

1. Does it automatically stop spinning when it makes bad yarn? ● 2. Does it retain its cushion and resiliency in low temperatures, as over the week-end in winter and as long as it will draft? ● 3. Does it resist flattening or fluting over the week-end? ● 4. Does it require a standard diameter arbor, thus eliminating costly changes? ● 5. Is it impervious to excessive humidity? ● 6. Does it produce a minimum of eyebrows? ● 7. Does it eliminate lap-ups as long as it will make good yarn? ● 8. Does it eliminate cockled yarn, other factors being correct? ● 9. Does it produce yarn of maximum strength for a given staple, other factors being correct? ● 10. Does it require a minimum of attention? ● 11. Does it function properly ALL the time until worn out. ● 12. Has time proved it any better than the 600 odd "improved" roller coverings that have come and gone?

When the drafting surface of leather begins to wear off, the small fibres beneath it stick up and catch the cotton sliver, breaking down the end,—an AUTOMATIC signal that the roller must be replaced. That is why GOOD leather CAN'T make bad yarn. It doesn't go on for weeks and months spinning weak, uneven yarn for lack of detection.

Gilleather is GOOD leather. In fact there IS none better. Give it a try and watch your ULTIMATE roll covering cost go down.

GILL LEATHER COMPANY
SALEM, MASS.

Southern Representatives:

Gastonia, N. C. . . . . W. G. Hamner
Greenville, S. C. . . . . Ralph Gossett
Greenville, S. C. . . . . W. J. Moore
Griffin, Ga. . . . . Belton C. Plowden

SHEEP and CALF SKIN
GILLEATHER *for* TOP ROLLS

Reumann Represents Rodney Hunt in Southern States

C. H. Reumann, formerly connected with the Philadelphia Drying Machine Company, is now representative for the Rodney Hunt Machine Company, Orange, Mass., in the South.

◆

NOPCO to Build

Plans for a 5-story brick or concrete building to house manufacturing equipment which will provide additional facilities for the production of industrial chemicals and processing oils have been approved by the executive committee of the National Oil Products Company, Harrison, N. J. The building will be on the Passaic River site of the company at Harrison. The building is expected to cost between $150,000 and $200,000.

◆

Grange Advertising Manager of Stewart-Warner's Alemite Division

C. W. "Ted" Grange has joined the Stewart-Warner Corporation as advertising manager of the Alemite division, and will have as his assistant L. R. Light. C. C. DeWees will continue in his present capacity as advertising manager of the radio and household appliance divisions, with W. E. Macke as assistant. Mr. Grange formerly was associated with International Research Corporation, where he has been regional sales manager for the past six months.

◆

Amalgamated Chemical Corp. is New Textile Chemical Firm

A number of former members of the sales and technical staffs of W. H. & F. Jordan, Jr., Mfg. Co. have formed a new organization, known as the Amalgamated Chemical Corp., with offices and plant at Auburn St. and Trenton Ave., Philadelphia, Pa. Included in the group are Harold B. Dohner, Robert A. Bruce, John T. McGrogan, Frank T. Quinlan, John M. Jester and others. Mr. Dohner is president, and Mr. Bruce vice-president, of the new concern. The organization plans soon to put on the market new permanent finishes and other products for the textile wet processing industries.

◆

Book Introduces "Profit Packages"

The Hinde & Dauch Paper Company, Sandusky, Ohio, has issued a book, "Profit Packages", containing 12 different "profit packages" illustrated and described, to aid users of boxes and packages toward a fuller and more profitable use of package salesmanship in the merchandising of their products.

Champion's Float Wins First Prize

During the rhododendron festival held at Asheville, N. C., during June, the prize for floats was won by Champion Paper and Fibre Company. The float was designed by W. J. Damtoft, represented the development of writing medias, beginning with the stone age and running through the history of time to the clay tablets, papyrus, parchment, and to the present modern book.

◆

Anner Leaves Thomas and Skinner Steel Products

Thomas and Skinner Steel Products Co., Indianapolis, Ind., have announced that Henry Anner, formerly southern representative, has severed his connections with this company.

◆

Warrington Forms Own Organization

F. W. Warrington, of Charlotte, N. C., has disposed of his interest in W. A. Kennedy & Co., Charlotte, manufacturers' agents, with whom he has been actively associated for a number of

Mr. Warrington

years. Mr. Warrington has established a new organization under his own name, and will continue to represent many of the manufacturers whose accounts he has handled in the past. Among them are the Fletcher Works, Inc., Philadelphia Drying Machinery Company, and others.

◆

Royce Chemical Company Observes 10th Anniversary

Royce Chemical Company, Carlton Hill, N. J., recently celebrated its 10th anniversary with a dinner-dance for employees. Service pins denoting 5 and 10 year service records were presented to 48 men and women employees. There were 125 at the gathering, many of the wives of the 80 employees being present. The employees presented Albert J. Royce, president and general manager, with a diamond service pin; a pen-and-pencil set to J. Clinton Cadmus, vice-president; and a belt-and-tie set to Robert S. Griffith, secretary.

The company was founded in 1929 by Albert J. Royce, who previously, for 12 years, had been with Jacques Wolf & Company.

Imperial Rayon Corporation Takes Over New Process Rayon Co.

Imperial Rayon Corporation, Gloucester, N. J., is new name ratified by the stockholders of the New Process Rayon Corporation. Paul Zens continues as president, and P. E. Harrison was named vice-president and general manager. Other directors include Hudson W. Reed, Harry W. Harrison, Standish F. Hansell, and Halton A. Coward.

The company employs a cuprammonium process for rayon production; and Mr. Zens announces the development of a new type of cuprammonium yarn in which the dyeing is an integral part of the spinning process. The plant is now operating at capacity, and it is expected to increase the capacity to 10,000 pounds daily. The company will also specialize in yarns for cords used in automobile tires and in bleached and colored yarns for sewing thread. Controlling interest of the corporation is held by Edward G. Budd Mfg. Co., Philadelphia. Martin P. Glynn, Jr., 1700 Walnut St., Philadelphia, is general sales manager, and Barnhardt Brothers, Charlotte, N. C., have been appointed southern representatives.

◆

Koroseal Uses Increased

Of interest to many textile men will be the literature being distributed by The B. F. Goodrich Company, Akron, Ohio, which describes the use of Koroseal as a coating for raincoats, shower curtains, window curtains, drapes, aprons, tablecloths, card table covers, and many other washable articles. Fabrics covered with Koroseal are said to be K-treated. On the K-treated tablecloth, anything spilled on it may be removed with a touch of damp cloth.

◆

"Textile Research" for July

Notable subjects reported in the July issue of *Textile Research*, official publication of U. S. Institute for Textile Research and for released reports of The Textile Foundation, are "A Note Relative to Some Physical Properties of Cotton Fibres Without Growth Rings," by J. H. Moore and D. B. Anderson, and an illustrated article by Dr. Werner Bergmann on "Facts and Theories Concerning the Formation of Natural Silk." The latter is a Textile Foundation publication, and is based upon the latest developments of research. Paolino Gerli, president of the International Silk Guild, Inc., states that "I found it one of the most absorbing and enlightening articles I have ever read."

The same issue presents the new program for the third year of the research on textile drying, in progress at the National Bureau of Standards, noting that its continuance was recommended at a recent conference of subscribers.

June Rayon Shipments at 1939 High

June rayon yarn shipments were at the exceptionally high level of 32,900,000 pounds, compared with 25,900,000 pounds shipped in May, according to the *Rayon Organon*, published by the Textile Economics Bureau, Inc. Rayon shipments in June 1938 amounted to only 18,100,000 pounds.

The increase in shipments from May to June was entirely drawn from producers' stocks, which decreased from 41,500,000 pounds to 32,800,000 pounds at mid-year.

Shipments of rayon yarn for the first half of 1939 have totaled 161,100,000 pounds, which just tops the previous record first half shipments of 160,500,000 pounds in 1937. This new 1939 record is 62 per cent ahead of the 99,400,000 pounds shipped in the first six months of 1938.

◆

Oakite Celebrates 30th Anniversary

Oakite Products, Inc., in connection with its 30th year anniversary, has distributed a 48-page illustrated brochure, portraying the important part that production cleaning and its related operations play in American industries. The text matter is concise, describes the scope and influence of industrial cleaning in industry, and contains much data on the contributions made by American industry to the nation's economic progress.

◆

Salesman and His Job

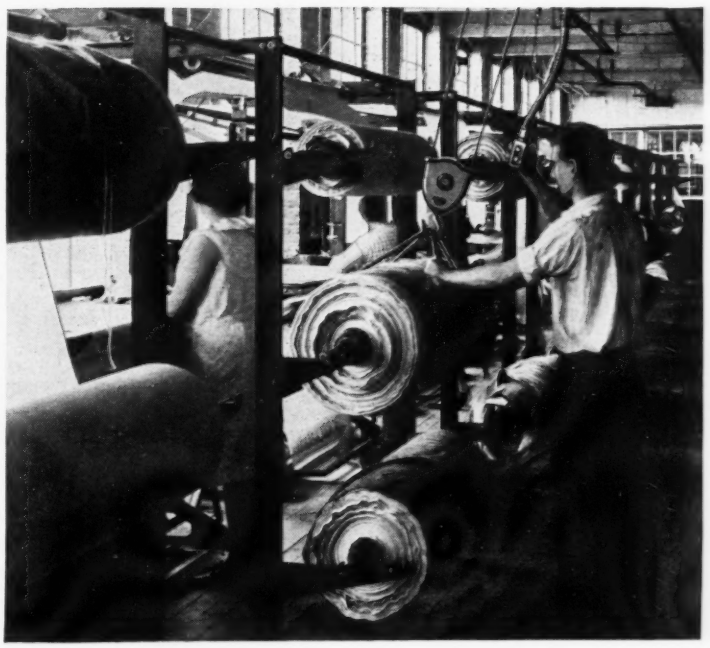
(Continued from page 60.)

we pay our utmost respect and return our sincere thanks. No irreverence is meant when I say, "Thank God, the day has passed when you have to drink a man under the table to get an order." Friendship still has its place in selling; it always should and always will. And all of us like to get with those we know in business and be convivial; it makes the carrying on of business more pleasant when we do get down to business. But when the salesman sits across the desk from the mill man he needs to have this as his guiding principle: "Am I rendering a real service to my customer, to my employer, and through them to my fellow man?" Because, while we may get by for a time with a pleasant smile or a fair game of golf, the ultimate test is whether we serve.

You may say all of this is too idealistic and, therefore, impractical. I grant its idealism, but I do not grant that this makes the attitude portrayed by this article worthless. It is the search for the ideal that shows us the way in many things. An automobile speed of more than 300 miles per hour on the flats of Great Salt Lake may be impractical of application to our highways, but from that performance the tire and automobile and other related industries learned much that is applicable to the cars we drive every day. Many similar illustrations in the field of science might be given. In the field of human relations, if you'll allow me to use this as an illustration and not infer that any comparison is being drawn with the principals in this article, about two thousand years ago a certain situation culminated in a crucifixion because a man held to an ideal. That ideal has proved impractical because of the way we have used it, but would you say the ideal was worthless?

CLEVELAND TRAMRAIL

OVER HEAD HANDLING EQUIPMENT



● Planned unit loads of increased size or a number of pieces will Speed up Production by Reducing Idle Machine Time.

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PERSONAL NOTES
about Men You Know

JOHN ARCHER, general superintendent of the Wayne Knitting Mills, Fort Wayne, Ind., has resigned to become associated with the Canadian Silk Products, Ltd., Sherbrooke, Quebec, manufacturers of full-fashioned hosiery, where he will be general superintendent.

GEORGE P. RAY, general sales manager of Riverside and Dan River Cotton Mills, Danville, Va., has resigned his position after many years, due to ill health. He is succeeded by FRED K. NIXON, who has for several years been in charge of the company's merchandising clothing division.

C. E. BLACKLER has been elected vice-president in charge of sales of the Springdale Finishing Company, Canton, Mass.

WILLIAM C. ZYLSTRA has resigned his position as general superintendent of the Spencer Mills, Inc., Spindale, N. C.

W. H. BUSHEE has become general superintendent of the Adrian and Madora Mills of the American Yarn & Processing Company, Mt. Holly, N. C., succeeding T. P. TAYLOR, who is now superintendent of the Algodon Manufacturing Company, Bessemer City, N. C.

J. S. EDMUNDS, who has been in the weaving department at the Ladlassie plant of the Gossett Mills, Anderson, S. C., has been promoted to overseer of weaving at this mill.

ELBERT PRIDE, formerly overseer of finishing at the Taylor Mill of the Bibb Manufacturing Company, Reynolds, Ga., has been promoted to superintendent of the plant, being succeeded as overseer by HENRY HARRISON.

J. L. RHINEHART, formerly connected with the Clover (S. C.) Spinning Mills, has become overseer of spinning and winding at the Chronicle Mills, Belmont, N. C.

S. J. HOLMES has received a promotion at the Moultrie (Ga.) Cotton Mills and is now assistant superintendent of this plant.

CARL DUNCAN, superintendent of the Pendleton (S. C.) plant of the Gossett Mills, has been transferred to the Riverside Mill of this company's plants where he is serving in a similar capacity.

RALPH J. SCHWARZ has resigned as vice-president and general manager of the Artcraft Silk Hosiery Mills, Philadelphia, Pa., and has sold his interest in the company.

C. E. MCCAW has been placed in charge of the Cutter Mfg. Company, Rock Hill, S. C. He succeeds DOUGLAS TOMPKINS, who recently resigned as secretary-treasurer to accept a position in Reading, Pa.

• The customary celebration of the birthday of the late Fuller E. Callaway, Sr., founder of Callaway Mills, LaGrange, Ga., was altered somewhat this year in that local civic organizations, instead of the mill, sponsored the celebration with memorial exercises which culminated, on July 14, with a barbecue, during which a new Pullman car, named after Mr. Callaway, was dedicated, with officials of several railroads and the Pullman Company present. Each year all plants of Callaway Mills close on Mr. Callaway's birthday, with full pay for all employees.

• Elliott Springs, president of Springs Cotton Mills of South Carolina, has purchased a private railroad car, which is parked on a siding at Fort Mill, S. C., and is being used as general office headquarters pending the erection there of a new general office building. Main offices of the company are now at Lancaster, S. C. The car bears the legend of "Lancaster & Chester Railroad", of which Captain Springs is president.

S. D. BYRD, of Rock Hill, S. C., has been made superintendent of the Mansfield Mills, Inc., Lumberton, N. C., succeeding O. G. MOOREHEAD, who has been transferred to the superintendency of the Jennings Cotton Mills, of the same place.

MISS OPAL HILL, of Lubbock, Texas, who was graduated in textile engineering at the Texas Technological College in Lubbock this year, has accepted a position with Wellington, Sears Company. Miss Hill has the distinction of being one of very few female graduates in straight textile manufacturing; during vacations she worked at regular mill positions in the New Braunfels (Texas) Textile Mills, and at the school received highest scholastic honors.

Z. BOYCE MANGUM has been transferred to the superintendency of the LaFayette (Ala.) plant of Avondale Mills, succeeding V. A. MIMS, who is now superintendent of the Sycamore (Ala.) plant. HAROLD M. CLARK, formerly production manager, has been made superintendent of Sally B Mill No. 2, at Sylacauga, succeeding Mr. Mangum. O. H. DUNN, general superintendent of the company's yarn mills, is on a leave of absence, following illness and an automobile accident. J. L. KING was recently transferred to the superintendency of the Central and Catherine plants at Sylacauga, succeeding R. L. BOWLES, who was made superintendent of the Stevenson (Ala.) plant. B. B. COMER, III, son of the late J. FLETCHER COMER, has resigned from the organization to enter another business.

BEN B. PEACOCK, of Atlanta, has joined the southern sales force of Whitin Machine Works, with headquarters at Charlotte, N. C. He is associated with WM. H. PORCHER, southern agent, in the position formerly held by A. B. MOSS, JR. Mr. Peacock, a graduate in textiles at Georgia Tech, was for a number of years sales engineer of The Foxboro Company; more recently he has been connected with research projects in textile manufacturing being carried on at the textile department of Georgia Tech.

Obituary

SOL N. CONE, 71, who at one time was associated with Cone Export & Commission Company and who formed the American Cotton Company, passed away the early part of July. He was the brother of BERNARD M. CONE, chairman of the board, and HERMAN CONE, president of Proximity Manufacturing Company, Greensboro, N. C.

JOE L. HART, SR., 72, founder of the Hart Cotton Machinery Company, Chickasha, Okla., passed away recently.

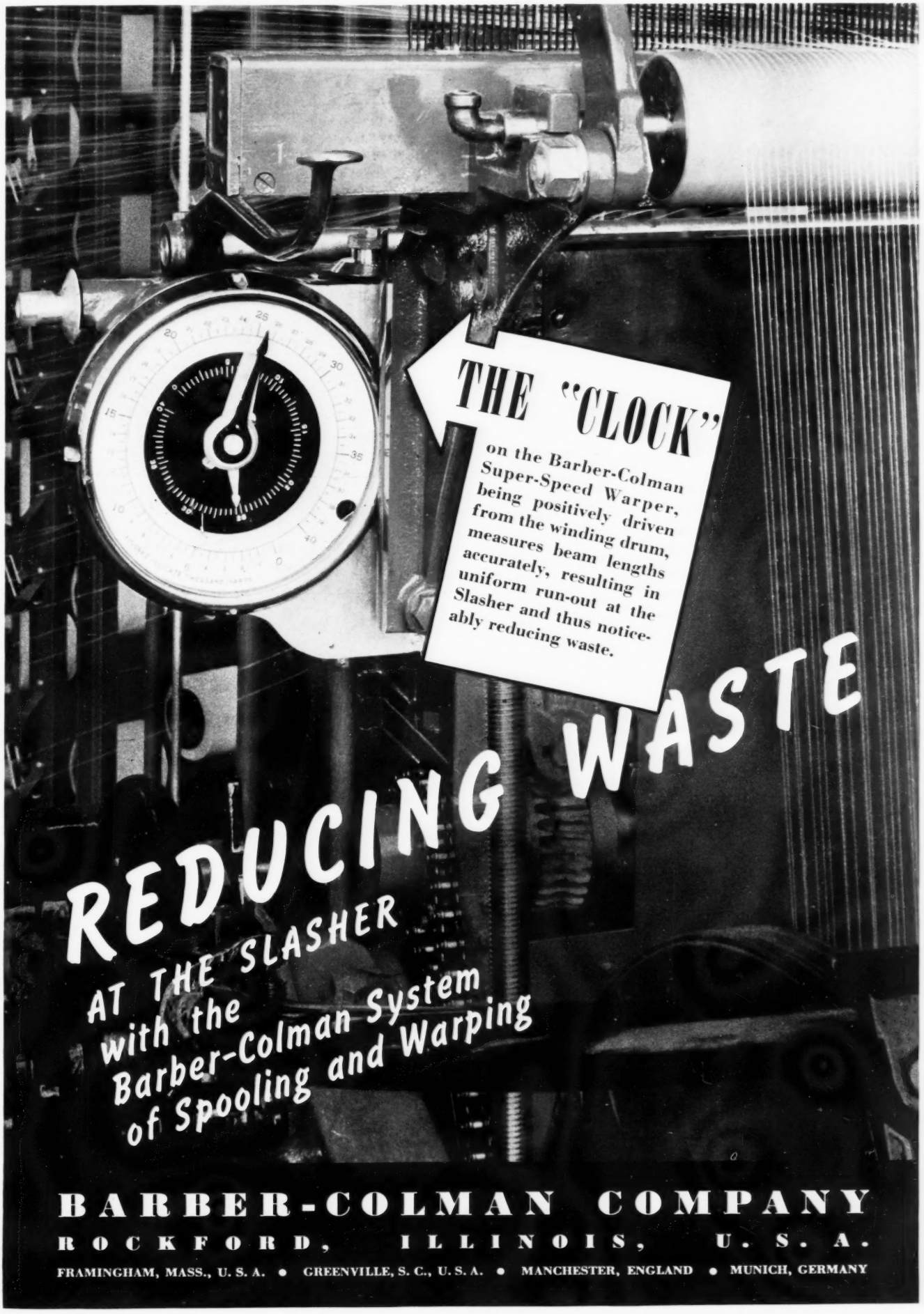
DENNISON WALKER, 95, retired woolen mill owner of Ware, Mass., passed away at his home July 6. He was born in Leeds, England, coming to this country at the age of 19.

WILLIAM STAFFORD, 58, head of Stafford & Company, with a plant in Manayunk, died in Philadelphia July 6.

HOWARD H. BORKNEY, 43, one of the owners of the Auburn (Pa.) Knitting Mills, passed away recently as the result of a heart attack.

J. M. MILLER, 74, passed away at Stony Point, N. C., early in July. He was a leader in the organization of the first cotton mill to be located at Statesville, N. C.

(Additional obituary items are on page 86.)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on the Barber-Colman Super-Speed Warper, being positively driven from the winding drum, measures beam lengths accurately, resulting in uniform run-out at the Slasher and thus noticeably reducing waste.
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AT THE SLASHER
with the
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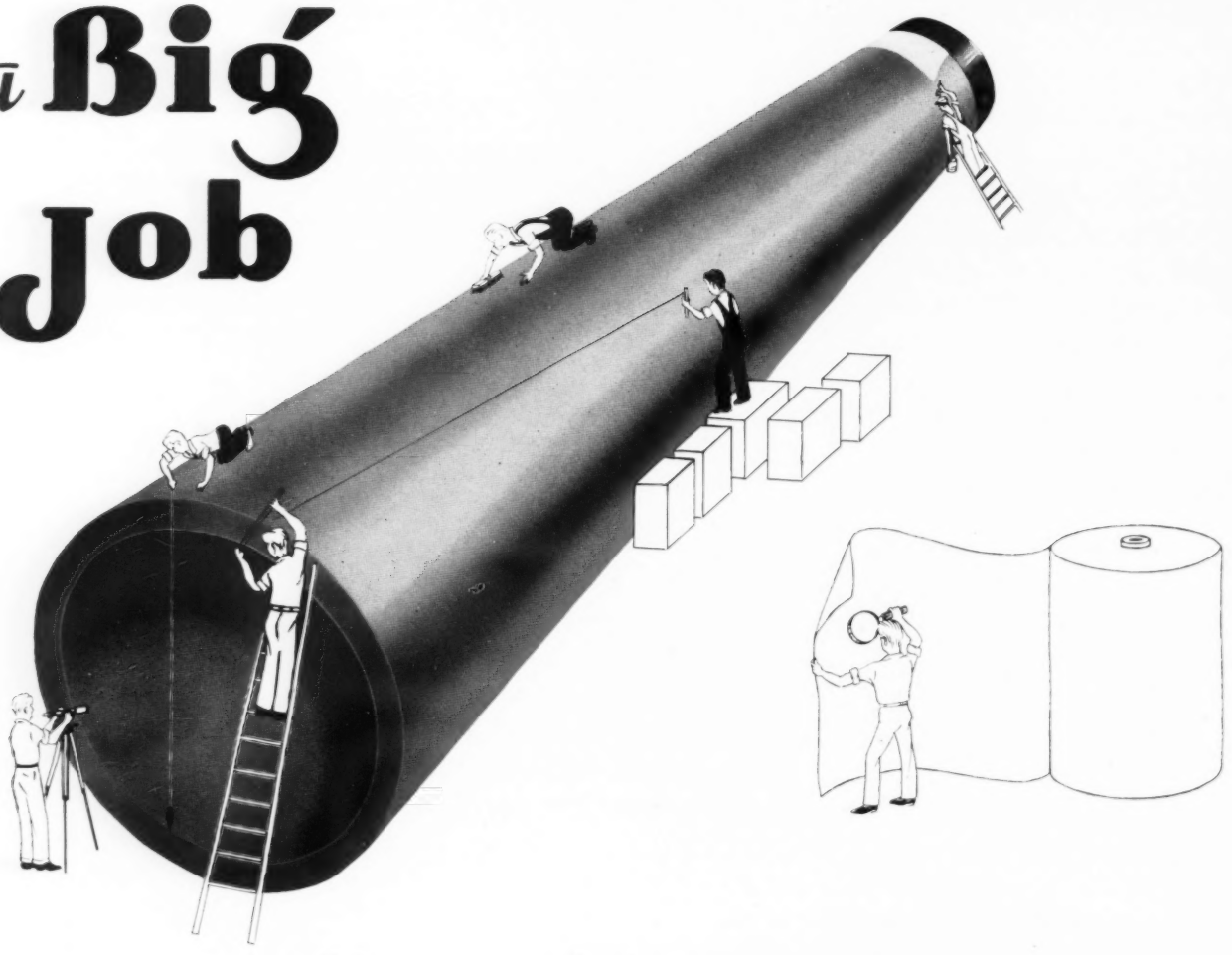
a Big Job



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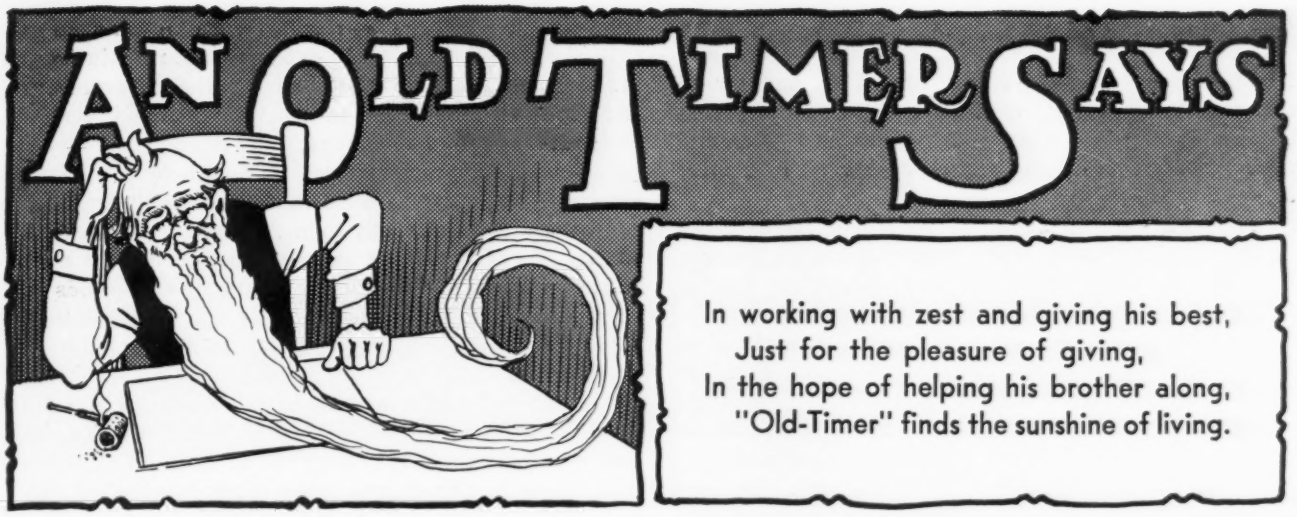
AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

IMAGINATION AND PROGRESS

Old-Timer reviews "Pilgrim's Progress" and takes his text—

MANY of the readers of this page remember, no doubt, the articles that appeared on this page several years ago concerning imagination and its advantages to overseers and superintendents, and, in fact, to all men in any kind of business. OLD-TIMER has referred, a number of times, to the late Arthur Brisbane who, we understand, was the highest paid editor of his time, and we have mentioned particularly his many references to imagination. Mr. Brisbane claimed that anything which could be imagined by the human brain would be possible of accomplishment.

That was covering a great deal of territory, but the longer we live and the more experience we get the more we are forced just a little nearer to accepting Mr. Brisbane's statement as a fact, and this acceptance on the part of the writer of this page has been strengthened in calling to memory many of his own dreams and predictions which, while ridiculed at the time, have since materialized and today are so commonplace it is hard to realize the attitude of some of the fellows back in those old days.

One example in particular: We prepared an article some 30 years ago (this was long before the OLD-TIMER page came into being) concerning the difficulties we were having at that time sizing warps. Practically all mills were making their own sizings, their own belt cement, soaps, etc. Some few mills had installed humidifiers in the weave rooms, and none in carding and spinning. The sizings contained no ingredients for attracting moisture; for that matter there was not much moisture to attract, on dry, windy days. So, you can well understand, we would have quite a few loom stops, yes indeed, quite a few. The article in question predicted that some day a cotton mill, with no windows to be opened, would be built; all doors in this mill would be kept closed, even in the hottest weather, and the humidity and temperature would be controlled from within the mill, regardless of outside conditions. Oh boy! did we get a razzing when that article was published. I think even Mr. Arnold, the editor at that time, felt a little ashamed of having published it. However, from time to time, other predictions were made, among them:

The future picker room machinery would beat the cotton fiber 75 per cent less than it was doing then; future fly frame processes would be reduced by at least half—that—oh well, further illustrations or references will sound equally as simple, but the few mentioned will help you to realize how easy it is to say, "How foolish!" when you hear or read of some fellow letting his mind run along into the future. Therefore, OLD-TIMER hopes you will encourage, rather than criticize or ridicule, the next fellow whom you hear say that he believes, for example, that it is possible to discontinue the cumbersome and expensive method of baling cotton in use today; that it may be possible to handle it with air, as we do small grain; it will not be necessary to bale our cloth; that we will receive power from great stations located in the coal and oil fields without the use of the expensive and inefficient power lines (copper wires); that cotton will be produced by the farmer so cheaply that it may be sold for two or three cents a pound and that the cotton fiber will be used in a liquid state for building roads, for roofing,

EDITOR'S NOTE

● "Old-Timer" completed the entire manuscript of this article, before we started the accompanying first installment. He has just sent us the following comment which we decided to use with the first installment:

"I have a fine letter from a friend of mine who read the original manuscript of this article even before the editor saw it. I wrote this article, hoping overseers and superintendents will get a thought out of it that will help them in their work, inspire them to improve their knowledge of human nature, enjoy life a little more, and be happy on their jobs. This friend says:

"**'This article revived my interest in Pilgrim's Progress, which I read many years ago; a friend knowing of my interest, sent me the book; my mother and sister wanted me to read it aloud to them to refresh their memories; my niece heard about it and began reading a copy, and the friend who sent me the book is reading a copy; I have advised my Sunday School class to read it, and "around and around she goes, and where she stops, nobody knows".'**

"So by heck, there are five people, I know, who got something out of Old-Timer's efforts before 'Cotton's' readers saw it, and I hope they will get something out of it, too."

etc., and in a plastic state for producing a cloth which will not have to be woven, and the same plastic material hardened for use in house-building, and for all other purposes where wood is used today; and that the time will come when both capital and labor will realize that to prosper, *the just rights of both must be conserved*—

Now I'll quit, because you no longer have just a little suspicion, but you *know* that OLD-TIMER is crazy, because you think you know that labor and capital will never co-operate as they should.

However, I started out to talk about imagination, imagination with a practical application; this is an effort to show you that nothing has ever been accomplished without its first having been imagined or dreamed by a human being, a statement that most any intelligent person will admit as being true. Then if it is true that an idea (imagination) must germinate in the brain before anything can be accomplished, it is up to you and me, and the other fellow, to get all we can out of this fact.

The overseer who has section men and weavers and other help working for him should find ways to reap the benefit of their imagination and to encourage rather than discourage this faculty. Then, when it comes to superintendents, managers, presidents, treasurers and others who may have subordinates of a still higher intelligence we can get some idea of the possibilities, and the value of co-operative thinking, and what is thinking but imagination.

With the present textile manufacturing set-up, or the present handicaps I suppose we should say, some smart guy is going to "bust out" with an entirely new idea some of these days, and then we will all say "Why in heck didn't I think of that?" What we are driving at is, with the price we must pay for weaving, spinning, carding or sweeping, fixed by law; with the hours we are allowed to run our machines fixed to the minute; with the price of our products fixed by a bunch of *!?, the natural question arises: "What shall I do?"

IMAGINATION! It has been said that "The soul without imagination is what an observatory would be without a telescope." And, in that connection, OLD-TIMER is departing somewhat from his usual illustrative material and is going to draw largely from one of the greatest of books, next to the Bible, giving you, in some instances, direct quotations from this book, and in other cases, the thoughts gleaned therefrom and put into his own words.

Did you ever read Pilgrim's Progress? Don't get uneasy now; OLD-TIMER is not going to preach, or even attempt to preach, no, not at all, because, in the first place, he realizes that he is not capable of doing that. Neither will he attempt to quote from that great book, the Bible, because, here again, his interpretation would be futile, without a background of study, which he does not possess, but he *can* give you some practical illustrations from a book written by a man who was recognized as one of the greatest of the dreamers.

Sometime ago OLD-TIMER had the good fortune to hear a sermon on the subject, "What Shall I Do?"; The minister was drawing on Pilgrim's Progress for illustrations, for the purpose of driving home to the minds of his hearers spiritual truths in connection with his sermon, but OLD-TIMER could not refrain from thinking of these illustrations as applied to overseers and superintendents, and to all other business men in their efforts to run their jobs, so he is going to employ quite lengthy quotations from this old book, Pilgrim's Progress, wherever he feels that they might apply to men of today, particularly to men who have the responsibility of running mills, or any department of a mill. Macaulay once said that there were only two minds in England during the latter half of the 17th Century possessing the imaginative faculty to a very eminent degree; and one of these produced the Pilgrim's Progress. He was referring, of course, to Bunyan; and he also said that Bunyan's use of similitudes brought him undying fame, etc., etc. It is those similitudes that appeal to OLD-TIMER as he reads Pilgrim's Progress and notes the similarity of his reasoning, more than 300 years ago, to the reasoning of men in this so-called modern era. How prone we are to look upon civilization, even 100 years back, and think of it as being crude, crude even with reference to the higher arts, and to think of people of that time as having less intelligence than the people of today. However, upon a perusal of the works of such men as John Bunyan, whose writings are just as applicable to our own day as they were to the time in which they were written, we realize the error of our thinking.

Bunyan was born in 1628 and lived 60 years, this being considered quite old at that time judging from what history teaches us concerning the span of life in those days, and considering the fact that 12 years of his life were spent in prison, where he wrote his great masterpiece. The regret is, of course, that his greatest fame came after his death, although thousands crowded to hear him expound his theories while he was living. His writings were, and are, considered invaluable in the study of English style, and also invaluable for their simplicity and direct forcefulness.

In reading Pilgrim's Progress you will note many words that, although English, have become archaic as far as current literature is concerned, and have in many instances a somewhat different meaning from that applied to those same words today; for example: Bunyan would say: The Pilgrim began to address himself to his journey. Meaning the Pilgrim began to make preparations for his journey; "Help me to watch and be sober". The word sober, in this sense having a wider meaning than that of freedom from alcoholism; "When the prince comes in his own". (Deviating a little from Bunyan's definition of the "Prince", we might interpret this, for our present purpose, as leader, head of a tribe or cult, or the mayor of a town.) "He getteth him a grievous crab-tree cudgel to beat them with". "He brake his mind to his wife and children" (He told them of what he had in mind.) The word show is spelled "shew"; honor is spelled with a "u". Instead of saying "He goes", it is "He goeth"; instead of "he sits", "he sitteth". And a sentence like this: "Not for that they believed that what he had said to them was true, but because they thought that some frenzy distemper had got into his

(Continued on page 111.)

TAXES

YOU *Don't* HAVE TO PAY!

● **SPOILAGE**

Inability to obtain correct machine speeds to match skill of operators, kind of materials, etc., results in spoilage and rejects which tax production and profits.

● **LACK OF UNIFORMITY**

Constantly varying conditions, in mills and materials, prevent the same quality of production day after day unless machine speeds are variable, too.

● **RESTRICTED MACHINE OUTPUT**

Fixed speeds prevent a machine from handling different types of goods. When speeds are adjustable, work range is widened.

● **IMPAIRED QUALITY**

Quality is frequently lowered because inflexible machine speeds make it impossible to meet exact specifications.

● **WASTE OF TIME**

When the flow of goods from one process to another is interrupted by machines that are not in "step," time is wasted, and production suffers another unnecessary tax.

● **SCHEDULE FAILURES**

A one-speed machine will do just so much, and no more, regardless of work to be done. When each machine in the line can be speeded up in emergencies, schedule failures are eliminated.

All these "taxes" on production and profits are eliminated entirely or substantially reduced when machines are equipped with REEVES Speed Control, the textile industry's approved method for *accurate* speed adjustability. REEVES PULLEY CO., Dept. T, Columbus, Indiana.

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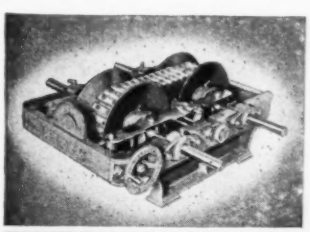

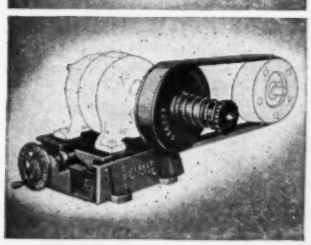

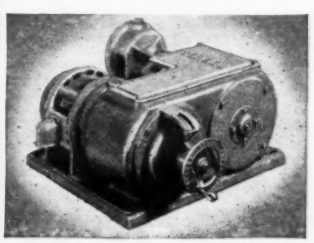

● *Left:* Transmission provides infinite speed adjustability over wide range.

● *Below Left:* Vari-Speed Motor Pulley, simple, direct drive from fractional to 15 H.P.; 3:1 range.

● *Below Right:* Motodrive combines motor, speed varying mechanism and reduction gears.

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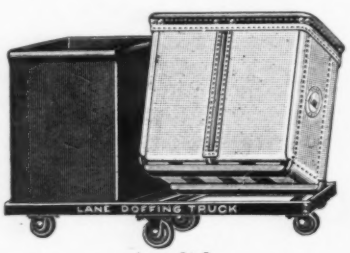

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HOW OTHER MEN MANAGE

Dirty Reed Marks

EDITOR COTTON:

In the weaving of our rayon goods we are having trouble with dirty reed marks. Although we clean the reed with a brush and cloth each time we take a cut of cloth off the loom, after three or four hours the reed is as dirty as before. The reed seems to have an oily substance on it, for which we cannot account. We use the same reeds, which are steel, for weaving cotton, but do not have this trouble.

We shall appreciate any information the readers of COTTON may give us.

CONTRIBUTOR NO. 6925

Picker Beaters and Blows per Inch

In which a contributor asks the advice of the readers of "Cotton" on a proposed change in his opening equipment . . . . . .

EDITOR COTTON:

For about three years we have been experimenting on our one-process pickers with various types of beaters, beater speeds, beats per inch, fan speeds, settings, and so forth, without any improvement in results; that is to say, the cleanliness of the stock and the breaking strength of the yarns have always remained the same. Of course our aim is to improve the cleanliness of the stock and to increase our yarn's breaking strength, which at the present time is below standard.

However, we think that we could obtain better results in cleanliness and breaking strength if we replaced our present 3-blade Kirschner beater, making 32 beats per inch, with a regular 3-blade beater with the same beats per inch, and if we increased the present beats per inch of our Buckley and 2-blade intermediate beaters, let us say, from 16 and 14 to 18 and 25 beats per inch. What do you think?

Before making this change we should like to ask the readers of COTTON to give us their opinions and advice regarding our present setup.

We are running 1-inch Middling cotton making a 16-ounce lap, 48 yards per lap, and it takes 6½ minutes to make a lap. Our opening room is equipped with a vertical beater making 600 r.p.m., and a Saco-Lowell No. 12 lattice making 650 r.p.m. Production per hour through these machines is about 1350 pounds. The total percentage waste, including opening and picking, is approximately 2 per cent. The picker speeds and settings are as follows:

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

Buckley breaker beater 1300 r.p.m.; 2½-inch feed roll 10 r.p.m.; fan 1400 r.p.m., feed roll to beater 3/16-inch; beats per inch 16; 2-blade intermediate beater 1100 r.p.m., 2/16-inch feed roll 24 r.p.m.; fan 1400 r.p.m.; feed roll to beater 3/16-inch; beats per inch 14; 3-blade Kirschner finisher beater 1000 r.p.m.; 3-inch feed roll 10 r.p.m.; fan 1500 r.p.m.; feed roll to beater 3/16-inch; beats per inch 32.

We have had this setup for a year and have had much success, but have not been entirely satisfied with results. Could your readers suggest any helpful changes?

CONTRIBUTOR NO. 6926

Weighting Spinning Rolls

This reads like a challenge to all of us. Can you give "Wash" a "practical" answer? . . . . .

EDITOR COTTON:

This is the year 1939 and I am going to prove that to the present time roll drafting and roll weighting on spinning frames are not clearly understood. Since we can remember there has been no change in the method of weighting top rolls on spinning frames, except for the unison method of roll weighting.

The question is, "how can we get away from the present unequal weighting of top rolls on spinning frames?"

Every overseer of spinning knows, or should know, that the weighted lever, stirrup, and saddle causes from three to five times as much weight on the front as on the middle and back rolls. We all know that the method now used in weighting of top rolls on spinning frames could not be used to advantage in any preceding processes and why? Simply because you must have direct weighting to each roll so as to insure the drafting efficiency of each roll.

Every reader will admit that if you have from three to five times as much weight on the front roll

as on the others on the drawing, slubber, intermediate, or fine frame such a method would not work. Then why was it ever adopted on spinning frames? I wonder how many readers of COTTON have considered the same thing.

The greatest evil I find in the present system is that the weight can be moved along the lever from one notch to another to increase or decrease the weight. Have you never stopped to think the harm that may result in misjudging the amount of weight? Here is a condition that is going on at this writing: A spinner will put in a new roll and in almost every case will move the weight to increase the weight because the claim is that a new roll is smooth and needs more weight.

Every *practical* man knows that new rolls require less weight. Now which is the best method of weighting? To have the present general practice of the weighted lever, stirrup, and saddle, or to apply the weight direct to the rolls?

Is the present method of weighting the cause of uneven yarn in many instances?

I made up my mind years ago that top rolls on spinning frames are not weighted as they should be, and I am going to tell the readers why I thought and still think so: When I was made superintendent of a mill in the state of New York, we received an order for a yarn made up of 50 per cent Egyptian cotton and 50 per cent Peeler cotton. When the roving reached the spinning stage we found that the unequal weighting made uneven yarn and that a change in the method of weighting had to be made. So, we discarded the method of the weighted lever, stirrup, and saddle, and instead the weight was applied direct to the front and back rolls. The middle roll was self-weighted, of metal of course, and of the same diameter as the bottom steel roll.

If the machine builders refuse to consider the above system, it can be adopted by manufacturers at a very small cost.

The present method of weighting spinning rolls creates two evils: (1) Wiry and uneven stock, and therefrom hard ends. There is nothing so detrimental to ring spinning as hard ends that come from the drawing rolls and sweep down a dozen or more ends. (2) Unnecessary wear of the rolls.

If you have the opportunity to try our system of direct weighting with the self-weighted middle roll, you will never go back to the weighted lever, stirrup, and saddle.

WASH (R. I.)

Some Comments on Setting the Cards

A dissertation with which you may or may not agree. Anyway, it's food for thought . . . . . .

EDITOR COTTON:

It is well said that fools rush in where angels fear to tread and I may be placing myself in that category when I venture to speak out my piece in the presence of such men as "WASH" and others that have given us such good advice and lessons in the columns of this paper. However, sometimes even the most foolish of us get ideas on our minds that just must be let out, so here goes. I want it distinctly understood that I am not trying to start an argument but trying to discuss or bring up some things that have come to my attention, and I will welcome the experience or ideas of others along these lines.

I will lay myself wide open at the start by making a broad statement and then trying to give at least some of my reasons for making such a statement. The card is the least understood machine in a mill; few if any of us *know* anything at all about it and over half of the men that call themselves card grinders should never be allowed to put a wrench on one of them! I know that this statement will sound foolish to many of you, and maybe you will stop reading this right now and turn to something that is written by one having at least a little sense, but stay with me please if for no other reason than to get me straightened out for I would really rather be proved wrong than to be right in what I have to say, but you will have to show me where I am wrong before I will believe it, and I am not talking about theory but actual proof.

Cards are set by means of gauges. These are in different sizes and are made in so many thousandths of an inch. No two men have the same sense of touch and no two men set a card alike regardless of the gauges. Nearly everyone will admit this, but few if any will admit what is obvious from this fact, that it does not make so very much difference by just what gauge you set a particular part of the card. For instance, take any part you wish, the setting of the doffer to the cylinder. Examine some of your cards, pick out 15 or 20 that are making just the kind of work that you want made, stop them off one at a time and examine the setting of this particular part and you will be in for a surprise. I defy any one to show me where the difference of two or three thousandths of an inch at this particular point will make any difference in the work. Remember that I am not talking of extremes; that is I do not mean you cannot show a difference between .005 and .029, but can you tell any difference between .005 and .007 or .007 and .010. At very first thought you will say of course you can, but try it first.

Further than that, most of the time when you are trying to set to .007 you may be setting to either the .005 or the .010 and just thought all of the time that you were setting to the .007. Few men have an accurate sense of touch and those that do not have no business grinding cards. Go over some of the settings that your men are making and see the difference in the settings that they are making to the same gauges; note the difference in the same man on two different cards. And how do you know that the doffer should be set to .007 in the first place? Sure, that is where it should be set; you have always set them that

way and got good results, so you say. I say that you do not set them to .007, if you had some accurate way to gauge the setting I would bet two to one that half or over of your cards are set anywhere except on the .007. Furthermore, I don't know if the .007 is where the doffer should be set or not; most mills use this setting and get good results, that is, that is the gauge to set to and they get as close to that as they can. Still you will find cards set to what you would call .010 and making good work, so why shouldn't they all be set to this gauge? Most of us will say that they know the doffer should be set to a .007, but if we will stop to think we will find that we do not know but just think that .007 is the setting and let it go at that.

Now I will give you a more extreme example. The licker-in is the weakest part of the card. I mean by this that it is the least perfect part. Lickers-in are not round; they are not all the same size and are the most inaccurate part made about the card. Why this should be I am not fully aware, but it seems that some way should be found to make them more perfect. There is a crying need for this because the licker-in and its imperfections give the grinder more trouble than any part of the card, and a lot of the times he does not know it!

Now when the licker-in is set, how is it done? Well the gauge is inserted and the high side found and the setting is made to this side. Where then is your low side? You don't take the trouble to find out. You set the high side and feel with the gauge while turning the licker-in to be sure that you have the high side and never feel of the low side to see how far off it is. Do you know that most of the licker-in is set to whatever gauge the low side is set to? How do you know that this is not the proper gauge to set all of the licker-in to? What gauge do you set your lickers-in to anyway? Do you really know that this is the point that they should be set to or not? Most of us do not.

To go deeper into the shortcomings of the licker-in, I don't suppose there is any room for doubt that they are not all alike as I stated. Did you ever take an old one out and put in one that had been re-wound, or a new one? Of course you have and you noticed then the difference in them. Sometimes you will have to back off every setting point, screens and all, and sometimes you will have to set all of them closer!

This will not sound reasonable to any but a practical man, that is, having to set closer to a new or re-wound licker-in, but any card grinder will tell you that he has done just that thing often.

Now what does that difference in the size do? The licker-in is round, even if not accurately so, and a difference in diameter will make a difference in the arc. The screens are made to fit a certain arc and the difference in the arcs will cause the screen to fit poorly. That is when the card grinder is in for trouble in making the card do just what he wants it to do. He can set it as near as possible to the same point that the others are set and still not have the right amount of cleaning done. He must use his head as well as the gauge here to get the proper work done, and many times the very setting that would seem to be the most impractical is the only one that will give the desired results.

I have, in a few instances, seen lickers-in that would not do the proper work in one card, transferred to other cards, where due to slight differences in the screens, they would work properly.

This brings up the screens and while I believe that as a rule they are more accurately made than the lickers-in, all of them do not have exactly the same arc, and this causes settings to be all together different on different cards.

Then there is the difference in the arc of the cylinder and doffers due to worn clothing. While the doffer does not cause much, if any, trouble as it gradually reduces in size, the cylinder, being encased practically all of the way around, does. The flexible bends on the tops will take care of most of this variation at least to a certain extent, but when it comes to the screens there is nothing to take care of except the setting that the grinder may give it, and this causes still more variation in the settings from card to card.

I have mentioned only a few of the things about a card that are causes of study and thought, and only to explain what I mean when I say that the card is the least understood machine in the mill and that few if any of us *know* anything about it. We only know that under certain conditions that they will usually do certain things in a certain way, but not every time. And more important, many times they are doing the things they do altogether differently from the way in which we think they are doing them; that is, we think we have them set to a certain gauge and we have them set to another.

This brings up the card grinder. I said that over half of the card grinders should not be allowed to put a wrench on a card and the reason for this statement is a combination of all of the things that I have just mentioned. I think that any reasonable man will agree that no two cards are alike; that no two cards can be set alike; and that no fixed rule of settings is worth the trouble of making them out. The proof of this is in the difference between each and every individual card in the parts that I have named. There are other parts that differ also; you will find that there are very few, if any, parts of the cards that are interchangeable, if they were the companies that build them would not be so careful to mark each and every part of the card with a number to make sure that the part is put on the card for which it is built. As long as you have all of these parts on the card everything goes along pretty smoothly and there is less difference in the setting of the various cards. But as the cards wear and the various parts have to be replaced with new or re-worked ones, more and more variation in the settings have to be made. This is where the grinder comes in and shows whether he is really a card grinder or not. Any one can take good cards and set them to certain points as near as humanly possible, but let them be worn, have parts that do not perfectly match each other, and it takes a real card grinder to set them to do the work required.

Some people have card sense and others do not. You can't put card sense into a man that does not

have it. It takes training and experience to make a card grinder, but despite this training and experience some men cannot grind cards successfully. It takes something that cannot be put in words or described, a man must have the "feel" of a card to do anything with it. A real grinder sets cards not by rule but by the knowledge of how that particular card must be set, and he cannot tell you himself just how he knows to do the particular things he does, but still he knows that is what it will take to make that card work. Every good grinder has pet cards on his job; these are the ones that he can make do most anything that he wants done easily, and he also has bad cards on his job that can hardly be set to do anything. Once he gets that bad card set right just try to get him to change it.

The man that should be kept on a section of cards is the man that after proper and sufficient training can be told just what you want those cards to do and then he can and will make them do just that, regardless of what gauge he sets each part to. He is the man that is so well acquainted with each card on his job that whenever anything is found wrong with one of them he will know just what part needs attention instead of having to inspect the whole card to find out what is wrong. A man that has to tear down the whole card to find out what is causing a cloudy web or some other defect in the work has no business grinding cards, that is, if he has been on the job long enough to get acquainted with each individual card.

The man that does not realize that each and every card is different from the others and that each is a different problem when it comes to setting it properly should never be allowed to put a wrench on a card.

CONTRIBUTOR No. 6720

Roving Waste Machine

REWORKING BAD ROVING as it is returned from the spinning department and the preceding processes presents a problem that is of constant worry to plant management, overseers, and supervisors. Apparently all plants manufacturing cotton goods have to solve this problem at one time or another, but waste can be minimized in a well-equipped mill by close supervision and trained operatives.

Most supervisors and operatives are familiar with the more efficient methods of holding bad roving waste to a minimum, but we know of no one who can positively prevent it. When a plant contends that no bad roving exists in the mill, the statement could soon be disproven by paying an operative (per hundred bobbins) to find and return bad roving from the spinning and other processes.

Since we know that bad roving will be with us for some time to come, it may be helpful to show how a machine can be made to re-work this bad roving so that the minimum of labor time will be necessary. On this machine, one person straightening bad roving can handle 500 to 1,000 bobbins per hour, depending on the number or hank roving used. Maximum efficiency is gained with coarse work. It is possible to straighten the work almost as fast as one can separate each operative's part by distinguishing marks.

The materials for the machine are inexpensive and usually can be selected from discarded parts of other machinery. Construct two end stands as shown in Fig. 2, so that they can be anchored to the floor, and fasten together with rods and pipe spacers at points *J*. Select a standard bearing *E* for each end stand to support roll *A*, Figs. 1 and 2. Make a wood or metal roll *A*, six or seven inches in diameter and 80 inches long, with journals "*a*" in each end to fit the bearings selected. If made of metal it will be necessary to have wood inserts to permit the use of nails to hold the leather. It can be an old loom cloth roll.

Be sure that the roll is straight and true on the journals. Place roll *A* in the lathe and spiral it with new two-inch (convenient width) single ply, leather belting, placing the finished side to the roll. Finish the leather covered roll by cutting and sandpapering as would be done to a wood or metal roll. Remove the leather and spiral on the roll again with the finished side out. This gives a smooth roll now on which the leather is of uniform thickness. Place the roll *A* in the bearings with the long journal and 10-inch tight and loose pulleys, *C* (drawing or narrow faced) on the right hand end with the idle roll *B* next to the operator.

Place heads and journals "*b*" in the ends of a gal-

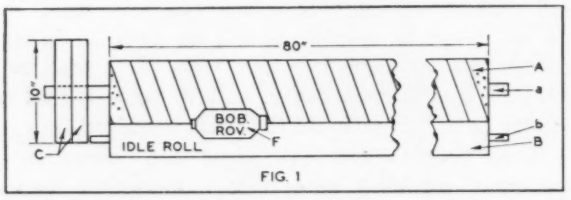


FIG. 1

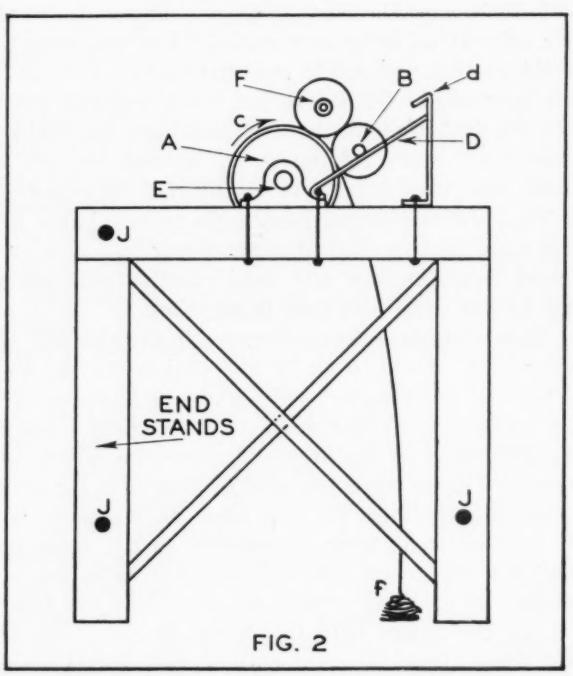
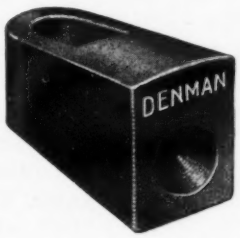


FIG. 2



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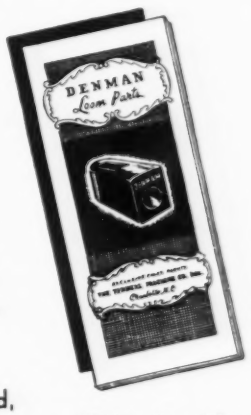

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vanized piece of three or four-inch pipe to build idle roll *B*. Put this in the lathe and turn it down smooth and thin to decrease the weight. It must be straight and without dents or rough places. Put this roll *B* against *A* in such a manner that their tops will be level.

Construct incline bearings *D* at 30 degrees incline with a safety hook at "*d*". Cover incline *D* with fiber similar to that used on card cans as it will give longer life.

This machine can be driven from any convenient shaft for stationary work, or may be equipped with a small motor to permit the machine to be moved about the room and connected to sockets, so that each fly frame tender or doffer may straighten the bad work, should a regular tender for the machine not be needed. The leather roll *A* may be driven 400 to 450 r.p.m.; most work is in the direction indicated at "*c*". Excess speed reduces the efficiency.

Operation: The machine is fed from the idle roll side by placing the end of the roving between the rolls and giving it a slight turn in the direction opposite the leather roll *A*. The base of the bobbin points to the right as shown at *F* in Figs. 1 and 2. The bobbins have a tendency to travel to the left end of the rolls and must be fed from the right end. At first it will seem difficult to start the ends of roving, but the tender will soon become proficient in the operation. The roving waste is shown unwound at "*f*" in Fig. 2.

The leather roll *A* will become soiled from excessive use and cause the roving to lap around it. Lapping may also be caused by static electricity. To clean the roll *A*, use cleaning liquid or soap and water. Water eliminates the static. After cleaning dust with starch or powder.

The roll is safe to operate because the idle roll is free if the fingers are caught. It will pinch the fingers but not seriously. The safety hook "*d*" is to prevent the idle roll *B* from jumping off and injuring the operator's feet while he is straightening the work.

The machine is especially useful when a breakdown occurs on a fly frame and it is necessary to remove one or more layers from the bobbin. In a small plant it may be used as a bobbin skinner and eliminate cutting the bobbins.

CONTRIBUTOR No. 6938

Position of Squeeze Roll on Slasher

THE FOLLOWING INQUIRY was received by the editors of COTTON: "Can you tell me the correct running position of the squeeze rolls with reference to the copper roll on the slasher. That is, should the squeeze roll rest somewhat to the front, back, or directly over the center of the copper roll?"

Two mill men answered the question for this inquirer; the first answer is as follows:

In practice I favor the set-up as shown in Fig. 1. In this case both squeeze rolls are directly top center of the copper rolls. Their journals are on the same planes as the journals of the copper rolls and these planes are perpendicular to the floor.

Fig. 2., or back center, is preferable to Fig. 3, or slightly forward.

Fig. 1 gives the best dressing with the least amount of friction against the yarn. It is apparent that Figs. 2 and 3 will apply more friction during the actual period of dressing, or say the "squeezing point".

On real heavy sets, say around 6,000 ends, it is most doubtful that the blanket of the dressing roll contacts the copper roll during sizing or dressing. Since the squeeze rolls are not driven, the transfer of energy to drive the rolls is from the copper roll to the warp yarn to the wrapped blanket.

Fig. 2 or Fig. 3 I feel gives added friction against the yarn. I would say that the flow of size from the "nips" in Figs. 1 and 2 is satisfactory, but in Fig. 3 there is a puddle at top center of the copper rolls. The latter condition is undesirable.

With everything taken into consideration, and with as nearly mechanical perfection as possible, I prefer Fig. 1.

Ivar Moberg, who has for a number of years contributed to COTTON, answered this question as follows:

I would say that the squeeze roll, for mechanical reasons, should be on the top center of the copper roll. I wish to refer to the accompanying sketch in which Fig. 4 shows the squeeze roll on top center,

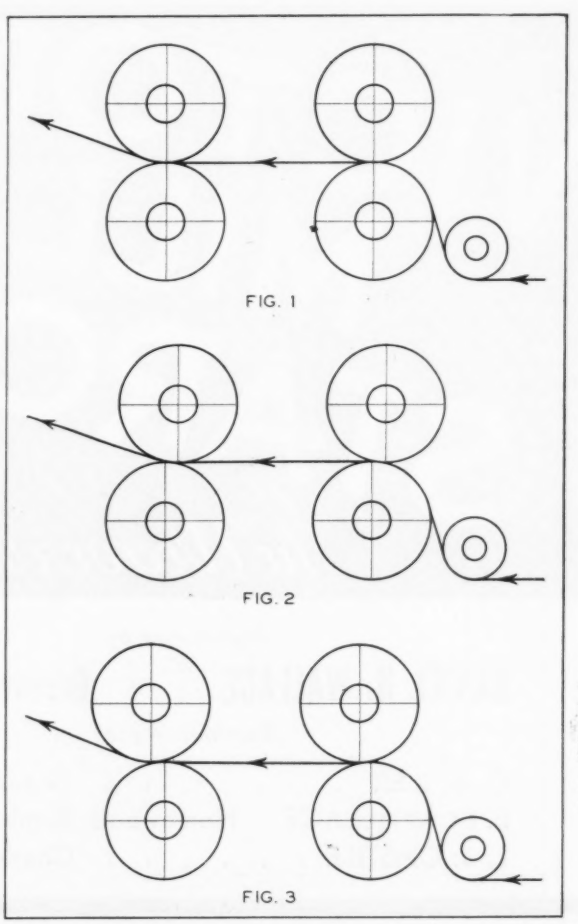
FIG. 1

FIG. 2

FIG. 3

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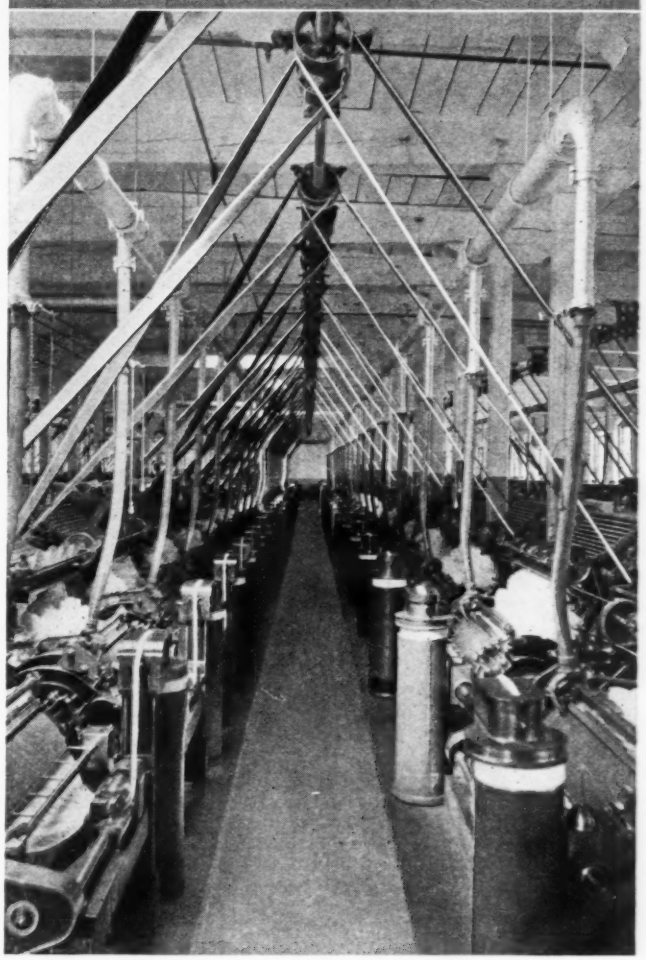

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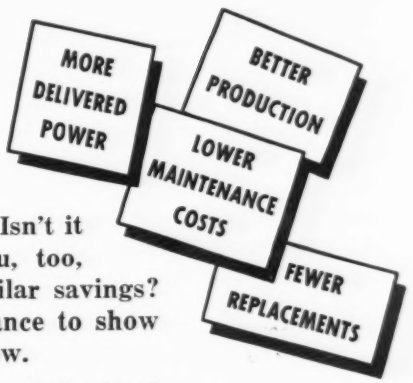

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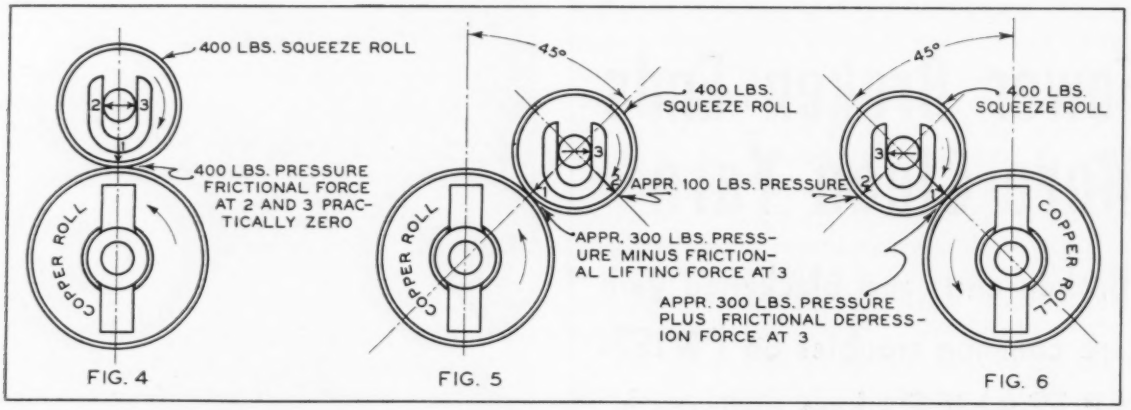
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400 LBS. PRESSURE FRICTIONAL FORCE AT 2 AND 3 PRACTICALLY ZERO
COPPER ROLL
45°
400 LBS. SQUEEZE ROLL
APPR. 100 LBS. PRESSURE
APPR. 300 LBS. PRESSURE MINUS FRICTIONAL LIFTING FORCE AT 3
COPPER ROLL
45°
400 LBS. SQUEEZE ROLL
APPR. 300 LBS. PRESSURE PLUS FRICTIONAL DEPRESSION FORCE AT 3
COPPER ROLL

FIG. 4 FIG. 5 FIG. 6

Fig. 5 shows it in 45 degrees front of and Fig. 6 shows it in 45 degrees back of the top center of the copper roll.

It is obvious that the position of the squeeze roll in Fig. 4 is ideal from a mechanical point of view, since the frictional resistance at points 2 and 3 is practically zero. The pressure at 1 is the full weight, in this case 400 pounds, of the squeeze roll.

The position of squeeze roll in Fig. 5, is such that the roller gudgeon is forced heavily against the bearing at 3, causing increased friction. The weight of the squeeze roll is divided in two directions, 1 and 2, with a rough estimate of 75 per cent at 1 and 25 per cent at 2. The pressure at 1 is further reduced by the frictional lifting force at 2, when the slasher is running.

The position of the squeeze roll in Fig. 6 is mechanically objectionable, since the friction at 3 is very great and makes it therefore a poor mechanical arrangement. While the pressure at 1 would be approximately 75 per cent of the squeeze roll weight, this pressure would be increased by frictional depression force at 3, when the slasher is running.

The arrangement in Fig. 4, with squeeze roll on top center of copper roll is unquestionably the most satisfactory. The excess size, squeezed out by the squeeze roll, runs back over the warp for quite a length which helps penetration. If the slasher for some reason must be stopped, the excess size runs back freely over the warp and prevents hard size on the warp when starting up. The next best arrangement is that shown in Fig. 5. This arrangement, however, has the disadvantages of diverting approximately 25 per cent of the pressure from the squeeze roll, creating increased mechanical friction and reducing the penetration. While the arrangement shown in Fig. 6, would facilitate greater penetration the disadvantages against this are too great to make this arrangement advisable. The mechanical friction, when the slasher is running, would be extremely high and cause the rolls to turn very heavily. If the slasher had to be stopped, the excess size on the warp would become trapped and if the slasher was stopped any length of time, the size would coagulate and form hard size on the warp when the slasher again was started up.

The editors of COTTON invite further comment on this subject or any other problems related to the slasher.

An Old-Timer Says—

(Continued from page 102.)

head; therefore, it drawing toward night, and they hoping that sleep might settle his brains, with all haste they got him to bed." So you see that the English language is gradually changing; new words are being added from time to time, such as "camouflage", "jitterbug", etc. The great Westinghouse company has placed several reels of pictures, with much written explanation, into a sealed cylinder, buried in a vault, to be opened by people living 5,000 years from now, and we are wondering whether the people who read that material 5,000 years from now will understand exactly what we were talking about; probably they will have to draw on their imagination somewhat like we must do in reading Bunyan's works.

Pilgrim's Progress is supposed to be a dream that Bunyan had, but of course was written while he was awake and fully capable of using the reasoning power of his brain; therefore, he was using his imagination, and that is the thought we are trying to get over to overseers and superintendents—the thought of cultivating the faculties of imagination. That is the way all the progress we have today has been accomplished, such as the automatic loom, the revolving flat top card, long draft, the separation of unskilled labor from skilled labor, the steam turbine, air conditioning, and all other improvements resulting from imagination—dreaming of the future and then entering upon a determined ambition to make those dreams come true.

(We are interrupting at this point solely because of space limitations. This serial discussion by OLD-TIMER is too long to present in one issue, and it is difficult to select a stopping point, in keeping with available space, that also represents a change of thought, etc. Next month we will continue the discussion at this point, but it will be necessary to keep the foregoing installment in mind when you pick up the story next month.—THE EDITORS.)

Hand Tools

1. Select the right tool for the job—never use a makeshift.

2. Use only tools in good condition—no cracked or broken handles, none without handles, no tools with mushroomed or broken heads.

3. Sharp tools are safer than dull ones. Keep all keen-edged blades sharp; store them safely when not in use.

4. When using a draw knife, fasten the work in a vise; never brace it with your knee.

5. Avoid using a hammer with hardened face on a highly tempered tool such as a drill, file, die, jig, etc. Chips may fly.—*National Safety Council.*

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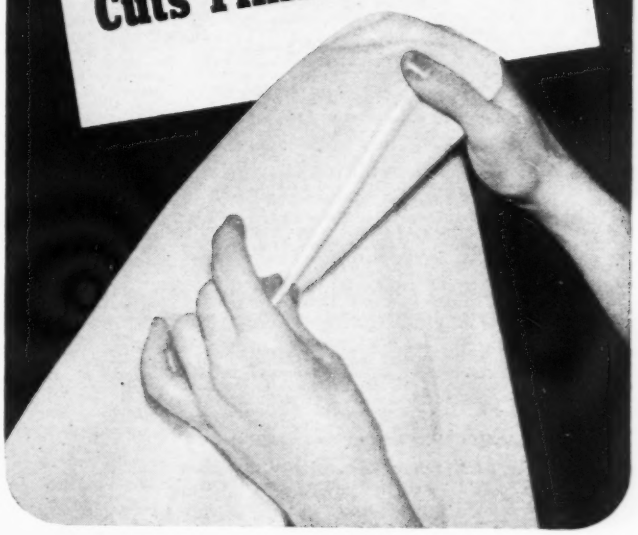

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217. Diamond Fibre Hollow Ware—32 page booklet and catalog attractively illustrated, showing various types of boxes, trucks, cans, barrels, baskets and trays of Diamond Fibre Hollow Ware. Of interest to every mill man in solving material handling problems. Free on request. Continental-Diamond Fibre Co., Dept. C, Wilmington, Delaware.

218. Butterworth Electric Guiders—6-page folder describing and illustrating the new Butterworth Electric Cloth Guider. This guider is built on the same principle as the Foxwell Air Guider and is unexcelled for fast, accurate guiding. H. W. Butterworth & Sons Co., Philadelphia, Pa.

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226. Solutions for Your Problems—20-page illustrated booklet containing valuable information on the scouring and processing of wool and other fibres. Detergent Products Corp., Atlanta, Ga.

233. Catalog No. 98—an attractive illustrated catalog describing in detail the Shamrock shipping containers and the new canvas trucks for textile use. Meese, Inc., Madison, Ind.

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240. The New Proctor Automatic Yarn Dryer—6 page illustrated folder describing the new Proctor automatic yarn dryer which has the exclusive new Proctor traveling skein protector. Proctor & Schwartz, Inc., Philadelphia, Pa.

253. Brown Air-O-Line Controllers — This booklet will prove invaluable to the men in charge of dyeing, finishing and slashing, as well as the textile executive. 32 illustrated pages describing the various Brown Controllers. The Brown Instrument Co., Philadelphia, Pa.

258. Automatic Overhead Cleaner for Spinning, Winding, Warping and Twisting—24 page booklet showing the new American MonoRail automatic cleaner in operation on MonoRail track circuit over Spinning, Warping, Winding, Twisting, etc. This cleaner incorporates a new scientifically designed blower producing a whirling column of air directed and controlled so that it prevents accumulation of fly with no harm to roving. The American MonoRail Company, Cleveland, Ohio.

259. Cotton Conditioning with Texspray Compound — 18-page booklet describing the Texspray method of cotton conditioning. It has been proven that this method will save money, increase production, increase flexibility of fiber, eliminate static and reduce fly and dust. The Texas Company, New York, N. Y.

260. Lubrication—This attractive booklet contains valuable and interesting articles on loom lubrication and also on spinning design and the fuction of spindle oils. The Texas Company, New York, N. Y.

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263. Gastonia Brushes—New catalog and price list showing the complete line of brushes for the textile mill. Gastonia Brush Co., Gastonia, N. C.

269. Stainless Steel Equipment for the Dyeing and Textile Industry—Attractive four-page folder describing the Blickman line of dyeing equipment. S. Blickman, Inc., Weehawken, N. J.

271. The New American Adjustable Diameter Wedgebelt Pulleys—illustrated leaflet describing the American adjustable diameter sheaves designed to produce the best performance in all types of V-belt driven textile machinery. American Pulley Co., Philadelphia, Pa.

272. Where to Buy Monel Metal Textile Equipment—Attractive booklet which lists the names and addresses of experienced fabricators of Monel Metal equipment for the textile mill. The International Nickel Company, Inc., 67 Wall St., New York, N. Y.

277. Building Rubber Tension Roll Covering—attractive four-page folder describing the new scientifically correct product designed for taking of all synthetic fabrics, natural silks and fine cotton goods. Boston Woven Hose & Rubber Company, Cambridge, Mass.

278. Textile Testing Laboratories—a 10-page illustrated booklet describing a modern textile testing laboratory and pointing out the necessity for laboratory air conditioning systems. Ask for bulletin 136. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, North Carolina.

279. When Cleaning's Automatic, a Spinner's Free to Spin—a 10-page illustrated booklet dealing with the Parks automatic traveling cleaner. Ask for bulletin 1036. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, N. C.

284. Morton Nickel Iron Quick Opening Handle Gate Valve—Illustrated leaflet describing the new Morton Valve for dyeing machines, pipe lines, steam and water lines, boiler blower valves and throttle valves. Morton Machine Works, Columbus, Georgia.

286. Tricon W-30—Study of wetting agents and their activity with recommendations for textile processing. Rohm & Haas Co., Philadelphia, Pa.

287. New American Pulley Motor Base Catalog—an attractive new illustrated catalog describing in detail construction and application of new tension control motor base. Includes data comparing performance of drives with and without tension control motor base and applications are shown for both flat and V-belt drives. American Pulley C., Philadelphia, Pa.

289. Caustic Soda Bulletin—a data and reference book designed for the user of caustic soda. Complete with charts, drafts and formulas. Pennsylvania Salt Mfg. Co., Philadelphia, Pa., who also manufactures Hydrogen Peroxide.

290. Hyatt Roller Bearings on Textile Machinery of All Kinds—34 page booklet which describes and illustrates how Hyatt bearings are being applied to textile machinery. Hyatt Bearings Division, Newark, New Jersey.

291. Wolf Products for the Textile Trade—Illustrated booklet describing the Wolf line of chemicals for the printing, dyeing, sizing and finishing of all textile fabrics. Jacques Wolf & Co., Passaic, N. J.

295. Fence Facts—A new booklet illustrating and describing chain link fence in a variety of styles and four different metals for every type of fencing installation. Also wrought iron fence in various beautiful styles. A concise handling of information for those wanting facts about fence. Page Fence Association, Bridgeport, Conn.

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299. The New International Time Recorder—inforgives complete wage and hour records. International mation on the new automatic time recorder which Business Machines Corp., New York, N. Y.

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314. Winding Production Chart—this useful production chart can be used for any style of winder. Also included are instructions for figuring yarn takeup speeds. Universal Winding Co., Providence, Rhode Island.

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317. Circular Knitting Machines—a fifty-two page illustrated booklet containing valuable information on the manufacture of transfer top hosiery. Includes illustrations of rib knitting principles, yarn changers, selvage welt, loose course and methods of laying in Lastex. Sent free on request to Fidelity Machine Company, 3908 Frankford Ave., Philadelphia, Pa.

318. It's the Film—attractive folder describing and giving specifications for Lubriplate, the lubricant possessing features not found in conventional lubricants. Lubriplate Division, Fiske Bros. Refining Company, Newark, N. J.

319. Lubriplate—the modern textile machinery lubricant—attractive illustrated folder giving recommendations for textile machinery lubrication. Lubriplate is the new lubricant which forms a film on shafts, bearings, gear teeth, etc., which prevents wear, corrosion and contamination due to products of wear. Lubriplate Division, Fiske Bros. Refining Company, Newark, N. J.

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321. Wooden Tanks for Many Purposes—attractive catalog containing much helpful data relative to general design and construction of wooden tanks for textile use. Also contains an interesting tabulation of experiments with different woods available for tank purposes Hauser-Stander Tank Co., Cincinnati, Ohio.

322. The Application of Soaps and Soap Products to Textile Processing—40-page illustrated booklet covering the principal operations in textile processing. Special notes and suggestions are given for those operations requiring soaps or soap products. Colgate-Palmolive-Peet Comany, 105 Hudson St., Jersey City, N. J.

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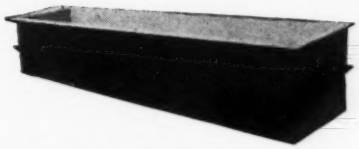

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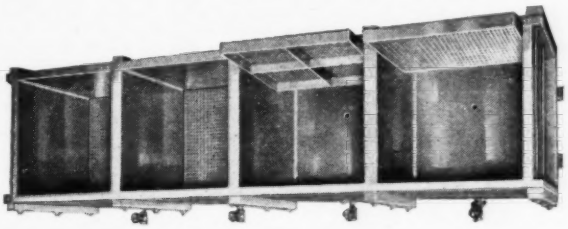

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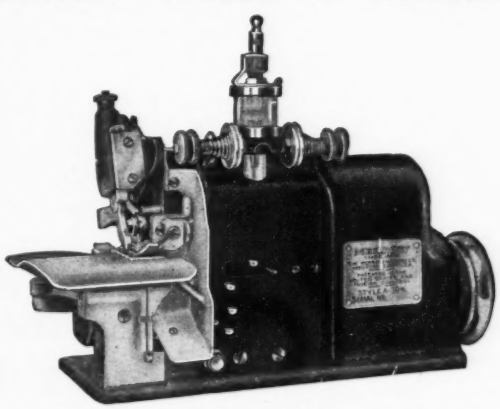

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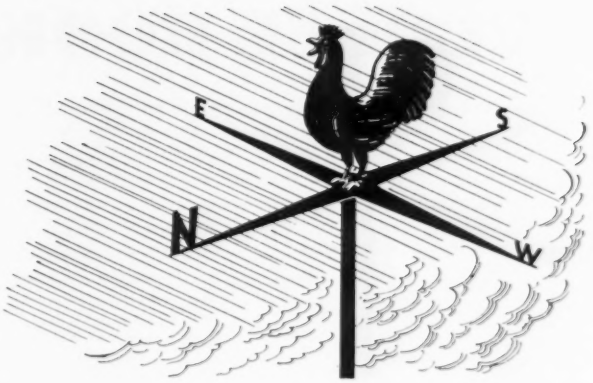

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333. Fafnir Ball Bearings for the Textile Industry—Outlining the applications and advantages of ball bearings on textile machinery. Fafnir Bearing Co., New Britain, Conn.

334. Precision Winding for Silk and Rayon Yarns—Describes the new No. 50 Leesona Winder and all attachments that are used for silk hosiery threads and rayon yarns. Universal Winding Co., P. O. Box 1605, Providence, R. I.

335. Casters and Wheels—192 pages, describing casters and wheels suitable for all types of industrial application. Every mechanical engineer and purchasing agent should have this. Darnell Corp., Ltd., P. O. Box 4027-N, Station B, Long Beach, Calif.

337. Sizing and Finishing—A pamphlet which will give the mill man an understanding of starch properties which will lead to greater efficiency in sizing and finishing. Stein, Hall & Co., Inc., New York City.

338. Thickening Materials for Textile Printing—Describing materials and methods employed in preparation of color thickening so that it may be properly and economically transferred to cloth through the medium of the printing machine. Stein, Hall & Co., Inc., New York City.

339. Diehl Textile Motors—a 12-page booklet illustrating various types of installations on textile machinery and equipment and describing the different types of Diehl Motors, as well as Diehl Grinders and Fans. Address Textile Dept., P. N. Thorpe & Co., 267 5th Ave., New York City.

340. Notes on Cotton Warp Sizing—a 45-page handbook giving valuable data on the purposes and properties of various sizing products, their uses and preparation, with much information on the operation of slashing equipment. Will help solve many sizing problems. Address The Hart Products Corp., 1440 Broadway, New York City.

341. Chapman Transmission Equipment — Catalog No. 37 describing and illustrating the complete line of Chapman hangers, hanger boxes, pillow blocks, ball bearings and other transmission equipment. Chapman Transmission Corp., Buffalo, N. Y.

342. Human Beings at Work Consume Energy Constantly—Attractive illustrated booklet describing the new Ideal food and drink conveyor and outlining the advantages of its use in the modern textile plant. Swartzbaugh Manufacturing Co., Toledo, Ohio.

343. SKF Better Spinning and Twisting—16-page illustrated catalog containing technical information relating to construction and performance of SKF roller bearing spindles, tension pulleys, guide and idler pulleys and miscellaneous pulley and bearing applications. Distributed by all leading textile machinery manufacturers and SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa.

344. Artday Fluorescent Lamps—Attractive folder describing the Macbeth fluorescent industrial fixtures for better seeing, inspection, color grading and color merchandising. Includes complete detail as to sizes and uses in industrial plants. Macbeth Daylighting Corp., New York, N. Y.

345. The New Air-Cooled Color Matching Skylight—illustrated leaflet describing the new air-cooled Macbeth BKX83 color matching skylight which is the last word in color matching and color identification equipment. Macbeth Daylighting Corp., New York, New York.

346. Dependable Finishing for Modern Elastic Top Hosiery—describing and illustrating equipment for basting and attaching insert elastic, attaching wide or welt elastic and seaming elastic in women's hosiery. Union Special Machine Company, 400 North Franklin St., Chicago, Ill.

347. Rhoplex Resins—Attractive folder discussing the outstanding properties of these Aqueous Dispersions with suggestions for their application to textiles. Rohm & Haas Co., Inc., Philadelphia, Pa.

348. Johnson Ledaloyl Bearing Bronze—Illustrated booklet telling the complete story of Johnson Ledaloyl Bronze, the newest development in self-lubricating bronze for textile bearings and bushings. Johnson Bronze Company, New Castle, Pa.

349. The Best Universal Locking System—Literature describing the Best Lock which has an exclusive interchangeable core and offers a solution to locking problems. Best Universal Lock Company, Indianapolis, Ind.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shop, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machines with general information on subject of full-fashioned knitting.)

62. Rubber Products for the Textile Industry—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts, showing horsepower rating, pulley sizes, V-belt sizes, also informatino on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J.

64. SKF in the Cotton Mills—24 page bulletin describing bearing installations for practically every machine in the textile industry including roller bearing spindle and tension pulley. SKF Industries, Inc., Philadelphia, Pa.

65. Bulletin No. 508. Cooper-Hewitt Industrial Illumination—booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Electric Vapor Lamp Co., Hoboken, N. J.

77. Bulletin S 200—Illustrating and describing the new Reeves variable Speed Drive for spinning and twister frames, explaining its many distinct advantages and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

110. 3-in-One Oil for Industrial Uses—showing the many industrial uses and advantages of this oil. A. S. Boyle Co., 1934 Dana St., Cincinnati, Ohio.

116. Arcy—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch and its many advantages. Drake Corporation, Norfolk, Va.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

120. Goodyear Mechanical Rubber Goods Catalog—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

128. Houghton's Hand Book for the Hosiery Dyer—This book contains the result of 69 years of experience in research and development of processing materials for the textile industries, together with a wealth of other data useful to every hosiery dyer. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

139. Textile Detergents—Theory of the use of alkalis and control of pH—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergent in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

141. V-Belt Engineering Data Book—Over 50 pages of pertinent engineering information including data on selecting a V-belt drive design of special V-belt drives, numerous standard tables, charts and belt and sheaves list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

152. Plant Check-up List—Crane Co., 836 South Michigan Ave., Chicago, Ill.

154. Johnson Bronze Bulletin No. 340—showing over 800 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

155. Link-Belt Catalog 1574 on the P. I. V. Gear—giving details of this positive variable speed control. Link-Belt Co., 307 N. Michigan Ave., Chicago, Illinois.

156. Link-Belt Engineering Data Book No. 125—showing features and giving engineering data on Link-Belt silent chain drive. Lik-Belt Co., 307 N. Michigan Ave., Chicago, Ill.

157. Grading Rules and Complete Specifications for Laying and Finishing Maple Floors—Maple Flooring Manufacturers' Association, 1794 McCormick Bldg., Chicago, Ill.

163. Roto-Koner—Bulletin describing the new No. 44 Universal Winder, known as the Roto-Koner for winding knitting yarns, which has many new and distinctive features. Universal Winding Company, P. O. Box 1605, Providence, R. I.

164. Johnson Rotary Pressure Joints—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. The Johnson Corp., Three Rivers, Mich.

168. The Tube-Tex for Tubular Knit Goods—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

170. Gates Textile Accessories—showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions. The Gates Rubber Company, Denver, Colo.

171. Design of V-Belt Drives—48 page booklet full of valuable tables and data showing the type, number and design of V-belts that will give the greatest efficiency on each particular drive. The Gates Rubber Company, Denver, Colorado.

176. Sonoco Products—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco products, including bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc. Sonoco Products Co., Hartsville, S. C.

184. Speed Control Handbook T-35—new reference book in variable speed control, said to be the most complete and helpful book on this subject ever published. 112 pages and more than 200 illustrations of interest to every production executive, purchasing agent, superintendent, overseer and master mechanic. Reeves Pulley Co., Columbus, Ind.

185. Dulux—The White Finish That Stays White—New book describing the new ten-point finish for factory walls and ceilings, the finish that stays whiter, stays cleaner and stands repeated washings. E. I. du Pont de Nemours & Co., Finishes Division, Wilmington, Del.

187. The Wildman Single-Head Full-Fashioned Hosiery Machine—Literature on request from the Wildman Mfg. Co., Full Fashioned Division, Norristown, Pa.

188. Form 374—This form enables you to gather your own cost data on your sewing machines and determine whether new Union Special Machines will show big savings. Furnished free by Union Special Machine Co., 400 No. Franklin St., Chicago, Ill.

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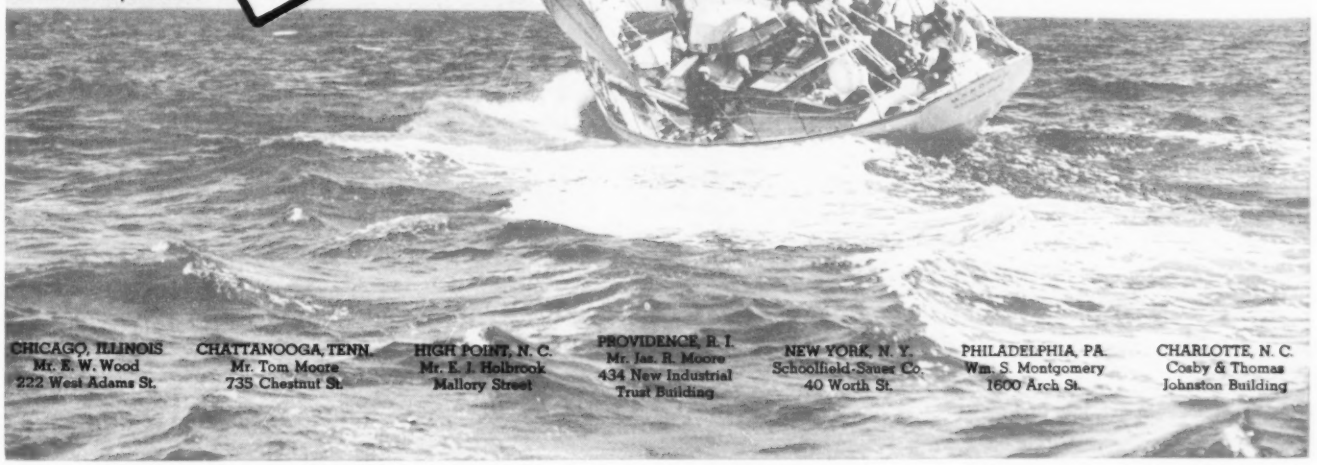

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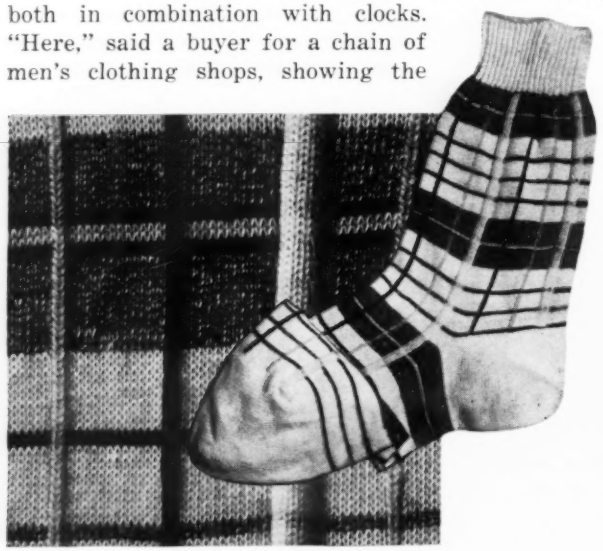
KNIT·KNACKS

"A man can't have too many socks" is the sensible attitude that men are taking about their hosiery. Encouraged by the tremendous variety of attractive styles, colors and patterns now being offered in all price ranges, and educated by manufacturers, style authorities and merchandisers to select hose to harmonize with suits, ties and shirts, the average man is becoming increasingly hose conscious. On this page you will find typical examples of the styles that are in growing demand—along with information about the machines that make them possible. These items were selected with the help and advice of buyers for New York's leading department stores and men's shops.

A STRIKE WITH STRIPES

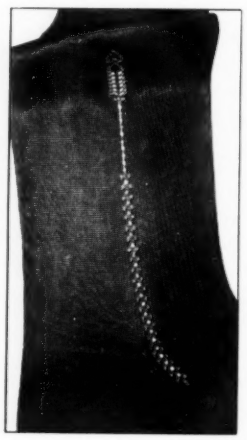
Stripes predominate in an increasing number of items that sell—hose with horizontal or vertical stripes, or both in combination with clocks. "Here," said a buyer for a chain of men's clothing shops, showing the



sport slack illustrated above, "is the type of thing that's catching on." Note the variety of horizontal and vertical stripes—and the heavy raised wrap stripe down the front, back and sides—a novel and fetching idea. It has a self-supporting top also, which is essential. Patterns with color-in-color and color-beside-color add to the selling power of this type of merchandise, which is produced with great ease and economy on the versatile Scott & Williams' HH-PW 24 Wrap, 18 Pattern Step Machine.

SELLING BY THE CLOCK

A sock with a beautifully designed clock like the one illustrated here is one of the biggest sellers in two of Manhattan's largest and smartest department stores. A nice arrangement of color-in-color does the trick. Sales figures show that men are taking more and more to



intricate and striking color effects in clocks and the manufacturer who gives his attention to achieving new and different combinations is building business on a firm foundation. The Scott & Williams' HH-PW Machine, with its color-in-color and color-beside-color attachments, permits the wrapping in clocks, all-over and other wrap patterns, or the knitting of two wrap yarns within a third wrap yarn. This is the equipment that enables a manufacturer to create a new and lively interest in his line, not only with clocks but with many original color and pattern combinations.

PLAYS ON PLAIDS AND ARGYLES

Argyles particularly are good sellers now—*if* they are designed in good taste. They fit very nicely into the trend toward harmonizing hosiery with suit color, fab-

ric and texture. Shown here are two smart items that illustrate the fine type of designs that are fast selling—a lisle argyle that combines a bead chain cross stripe with reverse color, and an elastic topped light weight wool sock with a geometric pattern in reverse plate, and effects in color-in-color, color-beside-color and wrap. The Scott & Williams' HH-PW-NRP is the first automatic machine to give all of the highly desirable features in the one knitting process.

Scott & Williams offers you assistance in the selection and use of these and other machines that open new opportunities of profit throughout the men's half-hose market.

SCOTT & WILLIAMS, INC., 40 Worth Street, New York, N. Y.

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"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

KNITTING SECTION

Iron Spots in Dyed Goods

By Noel D. White

IT HAS BEEN REPEATEDLY ASSERTED that most troubles occurring in the dyehouse can be traced to impurities found in the water. Water being the most important factor in the dyeing process, investigators have devoted years of study in devising means to remove the obnoxious elements which find their way into the water and cause troubles when used for dyeing. They have provided separators, coagulating tanks, settling basins, softeners and filters quite efficiently adapted to purify any kind of water. So now there is not a reason in the world a dyer shouldn't have a plentiful supply of clear, soft water which can be used with perfect safety.

The turbidity caused by mud running into streams, ponds, and reservoirs after rains, the color imparted to water by rotting vegetation is made to coagulate and settle and are filtered out. The hardness caused by calcium, magnesium and other salts and chemicals, with which the water comes in contact and are dissolved by it, can be successfully removed in water softening apparatus while on the way to the dyer's tank. However, iron has defied all attempt and can be traced in more or less quantity in the most thoroughly softened and filtered water. This residue of iron, however, is not giving any trouble to the dyers, at least not to this writer's knowledge and experience.

Traces of iron have been found even in distilled water. Anyone wanting proof of this assertion can verify it by the following simple test:

With the end of a glass rod, or a penknife, take a small quantity of yellow prussiate of potash and stir in a tumbler of the water to be tested until dissolved. Then add a drop or two of hydrochloric acid, stir well and watch. If there is no iron present the water will preserve the yellowish tint of the prussiate of potash, but the minutest trace of iron will react to form prussian blue giving the water a blue tint. The time it takes and the depth of color depending on the amount of iron present.

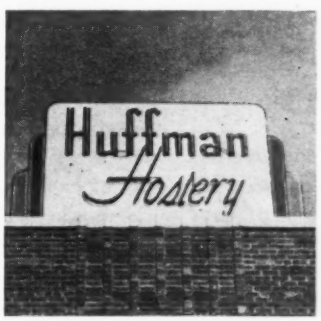
One day the writer made this test with some water which was supposed to be absolutely free from iron. The water remained clear for a long time. When the quitting time whistle blew the glass was covered with a piece of cardboard and left on the desk over night. The next morning the water in the glass had turned the color of the sky on a cloudless summer day, shattering all hopes of obtaining iron-free water.

A water softener will coagulate most impurities, including iron rust particles which may be in the water and will then be filtered out and kept behind while the water passes through the sand bed. If used immediately this water is clear and soft, in an ideal condition for the dyer, but it is a well-known fact that water is a potent solvent and iron pipes are easily attacked by it and corroded when used in conveying water to the dyehouse tubs.

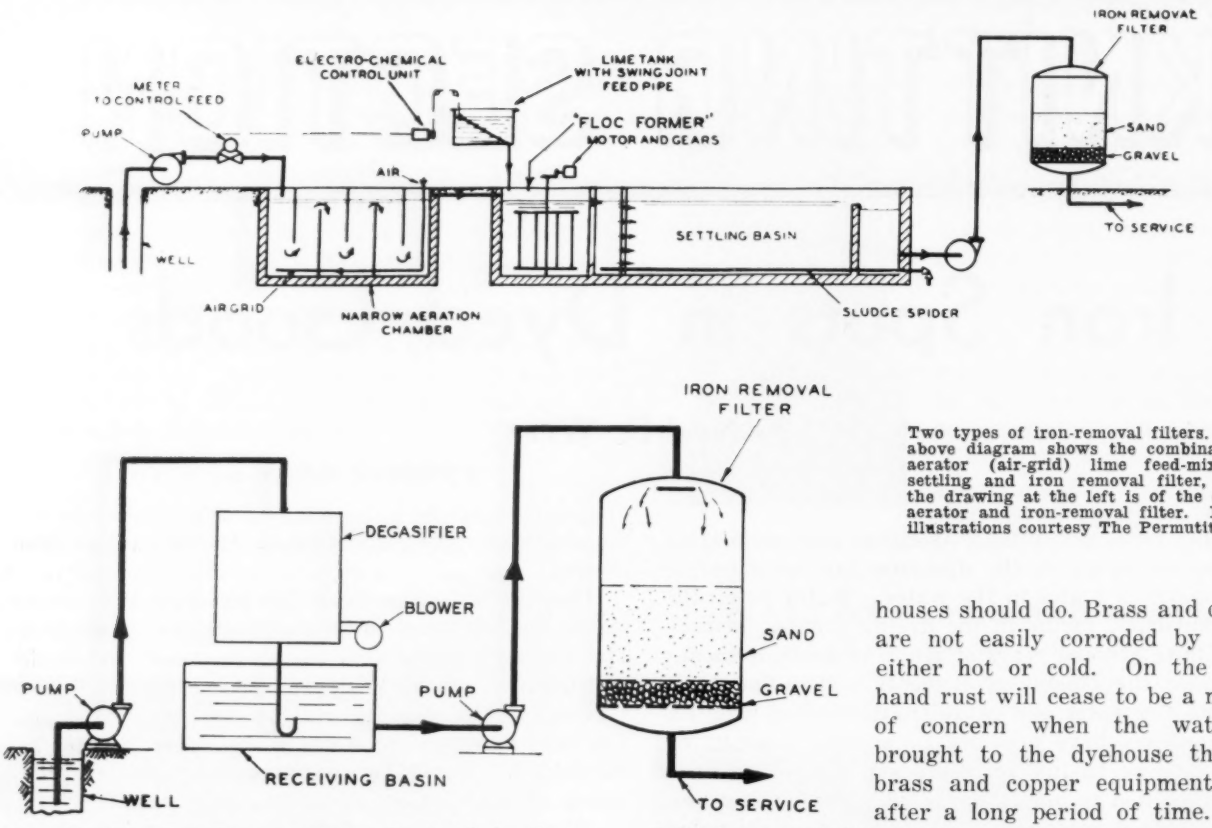
Galvanized Iron Gives Little Protection

Galvanized iron pipes offer a temporary resistance to the corrosive property of water. In time, however, the galvanization wears out and the pipes will get rusty. Signs of wearing will be invisible on the outside, but the inside is attacked and rusty particles will soon appear in the flow of water. This rust will not be so noticeable while water is flowing steadily, during working hours, but the effect of the corrosion will be seen after a period of rest, starting the day's work or after the week-end, when the accumulation of rust is disturbed and is likely to cause damage.

Collected inside the pipes the rust can be detected rushing out with the water into the first tub being filled. Damage in this case can be avoided if, as precautionary measure, iron pipes for water as well as steam pipes are flushed for a few minutes, to wash out the night or week-end accumulation



The above neon sign atop the Huffman Full-Fashioned Mills, Inc., at Morganton, N. C., indicates to all passers-by that here is the home of Huffman stockings. The September issue of "Cotton" will carry you on a trip through the Huffman organization, and give you a detailed picture of the newest of the plants in this chain of mills, which is equipped modernly in every respect, and has volume production on the new single-unit full-fashioned machine . . . . . .



Two types of iron-removal filters. The above diagram shows the combination aerator (air-grid) lime feed-mixing-settling and iron removal filter, and the drawing at the left is of the coke aerator and iron-removal filter. Both illustrations courtesy The Permutit Co.

into the sewer, before starting the day's work.

When rust starts its corroding work on the galvanized pipes it is only a matter of time until the pipes are destroyed. The way to counteract the damage is to cover the inside with a film of silicate of soda. This is done by flooding the pipes with a thin solution of silicate and let it set for a few hours; the solution is then dropped and the pipes left empty to drain and dry. The protection thus given is quite efficient, but is only a temporary remedy and will have to be done at frequent intervals.

The goods can be protected from being damaged by rust and rusty water by adding a small percentage of silicate of soda to the processing baths. By a reaction, which as yet is not quite understood, the silicate will attack and neutralize the effect of any iron or iron rust that may be in the bath, giving the goods quite an effective protection while being processed and this writer does not know of any fiber which will not be benefited by the use of silicate.

Of course a silicate of soda suitable for textiles should be chosen with care, as there are silicates for a variety of purposes. It should be clear and of easy flow, but not too alkaline. As low as two per cent can be used effectively to prevent a lot of mischief by rust in the water.

The Modern Water Line

In the past few years water storage and water pipe lines have also been made safe by bringing them up to date. In many most modern dyeing plants iron and galvanized tanks and water pipes have been done away with and replaced with brass pipes and fixtures and copper tank reservoirs. This is what all dyehouses should do. Brass and copper are not easily corroded by water either hot or cold. On the other hand rust will cease to be a matter of concern when the water is brought to the dyehouse through brass and copper equipment even after a long period of time. The initial cost of installation will naturally be somewhat higher, but the durability of the equipment and the certainty that no more iron rust will come in unexpectedly to mar a batch of goods will more than warrant the extra cost.

However, constant care should be exercised even with this modern method of supplying the dyehouse with water. The clearest, softest water will create a slimy film which will adhere to the reservoir and pipe surface, especially during a period of rest. This slimy matter, if allowed to accumulate, may cause trouble if it happens to be released unexpectedly in a tub where goods are being processed. What happened to the writer once will illustrate what he has in mind.

A Neglected Water Tank

We had a 10,000-gallon wooden water reservoir on top of the mill. Filtered water from the city, after passing through the mill system of softening, kept the reservoir full, giving the dyehouse an abundant supply of clear, soft water. Sometimes during busy hours the water would run low in the tank, but not enough, however, to cause any delay in the dyehouse operations.

The water entered the reservoir tank from the top and ran to the dyehouse from a pipe at the bottom of the tank. This pipe was screwed to a flange bolted to the wooden floor of the tank, which left about three inches of space between the bottom and the outlet. This space was an ideal place in which the slime mentioned above could collect and thicken, if let remain undisturbed for any length of time.

An alert superintendent would have thought about it, and kept it free of obnoxious matter by flushing it out once in a while, but, perhaps thinking that our

good water would never give us any trouble, nobody ever paid to it any attention until an unpleasant experience taught us the necessity of doing so.

One day, when the mill was rushed with orders for bleached goods, an unusual amount of water was being used. In the middle of the day and when the rush of work was highest a lot of bleached goods, which was being finished, came out dingy and spotted with yellow streaks. The worker had drawn a tub of water which was muddy as the Mississippi river and had given the alarm. The writer, who was in charge of the work, started an investigation. This led to the top of the water tank, which was found nearly empty, and the source of the mischief became apparent. The water entering at the top and dropping to the bottom of the tank with the force of a cascade had stirred the slime accumulation of many months, distributing the content into that batch of bleached goods.

Spots May Not Be Caused by Rust

Many times goods are splashed with machine oil or other substances which are not easily removed and the spots produced have all the appearance of having been caused by iron rust. The writer has come across many such spots, which have been blamed to the water when that was not the case at all.

Mildew spots on grey goods can easily be mistaken for rust when found on goods finished with doubtful water, and it is very convenient to lay the blame on the dyehouse whenever doubt arises as to the cause of trouble. Also rust from machines in the mill damaging the goods can be easily blamed on the dyer, unless the spots are detected on the goods before they are put through the processing.

Upon inspection if spots are found in the grey goods, as well as on the finished material, and it is desired to ascertain whether iron rust has done the damage, the test with prussiate of potash already mentioned can be used effectively. To make the test the spot is saturated with the prussiate of potash solution by wetting it with the glass rod and then a drop of dilute hydrochloric acid is put on the spot. If it is rust or any kind of iron spot it will turn a dark blue in a few seconds. The dyer can protect himself from a lot of alibi and misplaced guilt by keeping handy a small quantity of yellow prussiate of potash and a small vial of hydrochloric acid, which can be bought for a few cents.

Adjusting Stitch for Half-Hose

EDITOR COTTON:

This relates to the article on page 170 of the April issue of COTTON, wherein several knitting machine fixers were discussing the proper method of adjusting the stitch on circular machines to make different sizes of half-hose: One side said it is not necessary to change the links on the pattern chain but only necessary to turn in or out the screws on the main pattern drum. The other side claimed this procedure is not good sizing practice as it throws the stitch gauge out of proportion.

I am bound to agree with the latter group, as the fabric in a size 12 sock should be as good as in a size 11 or any smaller size and this cannot be secured simply by loosening the stitch.

Let us illustrate: The number of links in a stocking determines the number of courses of stitches in the stocking, there being 12 courses per link. Let us assume that we are making a size 11 sock and that we have 16 links in the foot and that the fabric in the foot, from the heel to the ring toe, measures 8 inches. That would be exactly 2 links per inch of fabric.

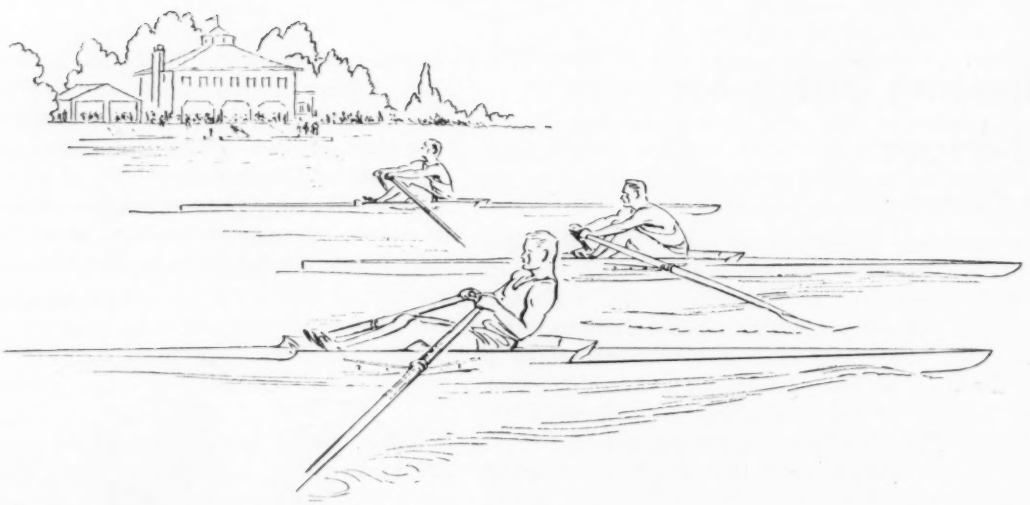
Now suppose we want to change the size from 11 to 9½, we would simply take out three links and the stocking should be exactly a size 9½ and the fabric would be the same as in size 11.

When making up a new style of half-hose, or any other stocking for that matter, you simply make a fabric that is to your own liking and add or take out links to give the length you want. Half-hose samples are usually made in size 11. After this is done you measure the fabric from the bottom end of the heel to the ring toe and divide this length into the number of links in your size 11 sock and this will give the number of links per inch of fabric and in changing sizes you can add or deduct links accordingly.

Some of the manufacturers of very cheap half-hose possibly do not add links when increasing the size but certainly no manufacturer of good half-hose fails to add links in proportion to the size.

CONTRIBUTOR NO. 6919

Accidents in the mill are costly. It is just as easy to work safely . . . . . .



As the race for profits in the making of full-fashioned silk stockings becomes more and more a race for *technical superiority*, the demand for "T M W" Needles (and the service back of "T M W" Needles) shows a strong and steady increase.

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KNITTING KINKS

Operating and Fixing of S. & W. Model ES Machines

(Article 7)

By Emmett Starr

THIS is the seventh article* in a series concerning the care, operation, and fixing of the Model ES machine. The series is written with the assumption that the reader has before him a copy of the S & W catalog of parts pertaining to this machine so that he can follow each Plate as mentioned in the article. Save your copies of the magazine so that you will have the series complete. Should you wish any particular phase of fixing discussed, the author will be glad to do so upon request through the editors.

IN OUR LAST ARTICLE we discussed the splicing yarn cutter and holder, and now we will take up the functioning of the main yarn cutter and clamp, both important parts of the Model ES machine.

The operation of the movable shear blade (200066) Plate 25 and the yarn clamp (11978) Plate 25 are controlled by the shear thrust bar (200068) Plate 11, being raised and dropped off the eighth race of drum cams. These cams are generally called cutting blocks. They should be uniform in height (the standard height is 3/8-inch), so when adjusting the blade and clamp for one, it will be the same for the rest of the cams. The length of these cams varies according to the distance that the main drum moves when making the necessary yarn changes. They should be long enough so that when the shear thrust bar is raised it will hold the blade and clamp open until the yarn that is being withdrawn is under the clamp and between the blades. When the yarn is in this position the thrust bar should drop off the cam so that the yarn will be sheared off clean.

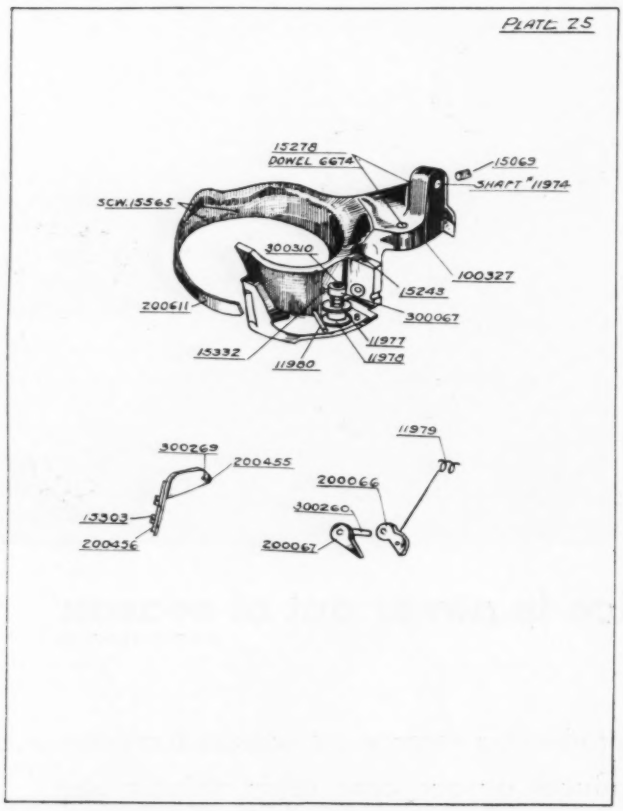


Plate 25 in the Model ES Catalog of Parts

In the event that the cutting block cams are too long, the clamp and blade will remain open longer than necessary, thereby causing the yarn to be pulled apart or held between the blades for a course or more, in which case the yarn so withdrawn will wind around the wrap yarns. When this occurs the wrap yarns will be held away from the needles which they are supposed to wrap around when making the pattern.

Shearing the Yarn

When the clamp or blade do not open sufficiently to allow the yarn to shear off, it may be that the thrust bar stud (10051) Plate 24 which connects the bar to the shear rod rocker plate (200070) has become loosened. When tightening this stud see that the thrust bar and rocker plate do not bind so that it hinders the clamp and blade from closing just as soon as the bar drops off the drum cams.

The shear rod rocker plate pivot pin (11983) Plate 24 is riveted to the lower end of the rocker plate and is long enough so that when inserted through the left end of the latch ring hinge pin (300099) the heel and toe rocker plate (200069), which is on the right side of the latch ring hinge bracket, can be placed on it. Detailed discussion of the heel and toe rocker plate will be taken up at a later date.

The sluggish action of the rocker plates is due to the plates being held against the latch ring hinge pin too tight by the rocker plate pivot pin collar (6888) Plate 24. Reset this collar so that the plates will rock freely. A bent pivot pin will cause the shear rod rocker plate not to rock or function properly. In this case it will be necessary to remove the pin so that it can be straightened.

The shear rod rocker plate stud (11349) Plate 24 should not be fastened too tight to the rocker plate,

*The first article appeared on page 108 of the August 1938 issue, the second on page 123 of the November issue, the third on page 112 of the December issue, the fourth on page 106 of the January 1939 issue, the fifth on page 103 of the March issue, and the sixth on page 103 of the June issue.

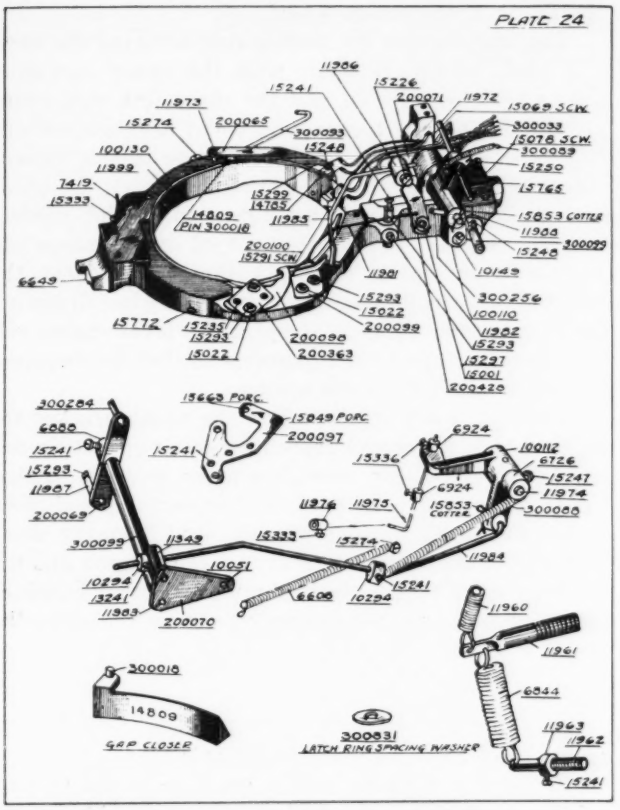


Plate 24 in the Model ES Catalog of Parts

but it should be turned in as far as possible, without the stud becoming tight, so that the opening, in which the rear end of the shear link (11984) Plate 24 is inserted, is in a horizontal position. The stud being too tight will hinder the action of the shear rocker plate, which will necessitate a stronger shear lever spring (300088) Plate 24 in order to close the yarn clamp and shear blade.

When the position of the shear link stop collar (10294) has been determined, make sure that the collar is securely fastened to the shear link so that there is no possible chance of it slipping or becoming loose on the link thereby causing the yarn clamp and shear blade not to open or be opened enough when making the yarn changes. The front end of the shear link, being bent at right angles, is inserted through the lower end of the shear operating lever (100112) Plate 24 and the only reason why it should not always be held in place is that the cotter pin, which holds it in position, may wear or fall out or not be replaced if it has been removed for some purpose.

Shear bracket (100327) Plate 25 is fastened to the latch ring by two shear bracket screws (15278) Plate 25 and also held in place by two dowel pins (6674) so whenever it becomes necessary to remove the bracket one can always feel secure that it will go back in its same position. When replacing the bracket see that there is no dirt or substance of any kind between the bracket and the latch ring and do not forget to tighten the bracket screws. A loose bracket or one tilted in any way will cause no end of trouble.

The shear bracket acts as a wrap yarn guide. The inside, bottom or any part of the shear bracket that the wrap yarns come in contact with must be smooth, free from nicks and burrs so that the fibers of the wrap yarns are not broken or the yarns fuzzed.

On the left outer side of the shear bracket are the yarn guide pin (11980) Plate 25, auxiliary yarn clamp (200455), yarn clamp (11978), fixed shear blade (200067), and the movable shear blade (200066). When having difficulty with the yarns not getting under the yarn clamp so that it can be sheared off when making the yarn changes, check the following: the outer edge of the shear bracket, guide pin auxiliary yarn clamp, yarn clamp, and the fixed shear blade.

Machine Parts Must Be Smooth

Make sure that the outer edge of the shear bracket is not burred or nicked. The least obstruction will hinder the yarn or silk, especially those yarns that do not have very much tension, from getting under the clamp and between the blades.

The yarn guide pin should extend out to the edge of the shear bracket. A pin that is short will allow the yarn to go over it instead of under, thus making imperfect yarn changes. It is also necessary that this pin should be smooth and free from all nicks and burrs.

The auxiliary yarn clamp plate (200456) Plate 25 should be smooth and have no sharp edges. The front of the plate should be beveled in order that the yarns will slide under it easily, and the bottom of the plate should rest evenly on the bracket. It is this auxiliary plate that holds the remaining yarns that are out of action when making the yarn changes, and prevents their getting out from under the main yarn clamp when the clamp is raised during the yarn changes.

The lower end of the yarn clamp stud (300310) Plate 25 should be flush with the bottom of the shear bracket so that the wrap yarns will slide smoothly along the bottom of the bracket and not get caught on the lower end of the stud, causing the wrap yarns to become damaged.

The yarn clamp should fit on the yarn clamp stud so that it does not bind, but so it will rise and fall easily; the bottom of the clamp should rest evenly on the shear bracket in order that it will hold the yarn more securely.

When the clamp fails to hold the yarns, causing the yarn to skip out at various times when making the changes, it may be caused by loose ends of yarn, lint, or dirt accumulating under the clamp after a period of time. Before making any adjustments on any of the parts pertaining to the shear bracket and clamp, see that no accumulation of particles is under the clamp.

The yarn clamp spring (11977) Plate 25 is held down onto the yarn clamp by the yarn clamp stud collar (300067). More or less tension can be placed on the yarn clamp by lowering or raising the collar.

The yarn clamp stud collar should be fastened to the stud with the head of the yarn clamp stud collar screw (15332) Plate 25 facing toward the rear. Do not fasten the collar onto the stud so the head of the screw will be towards the needles, as it is likely to come in contact with the needles that are raised when making the heel or toe, causing the needles to become damaged and cause a very serious smash-up.

The yarn clamp should be raised high enough when making the yarn changes to allow the yarn or yarns that are withdrawn to get under the yarn clamp easily.

Setting the Shear Blades

The fixed shear blade should rest or set tightly on the shear bracket and the point of the blade should extend nearly to the edge of the bracket, and not to the edge or not beyond the edge. It is important that this blade should be right. If the point of the blade is raised or extends just the least bit beyond the edge of the shear bracket it will hinder the yarn from going over the blade. A raised fixed shear blade may be caused by the blade being loose on the fixed shear blade stud (300260) Plate 25, or by the fixed shear blade setscrew (15243) not being drawn tight enough.

The movable shear blade is held against the fixed shear blade by the shear blade spring (11979) Plate 25. The spring should be strong enough so that the movable blade will be held close to the fixed blade in order to get the best results in shearing off the yarn.

Dull shear blades will prevent the yarn from being sheared off clean. They can be sharpened very readily on a fine emery wheel.

The adjustments for raising and lowering the movable shear blade are made with the shear operating collars (6924) Plate 24 and the shear link stop collar (10294). The upper operating collar also controls the raising of the yarn clamp. When the proper adjustments of the collars have been made, fasten the collar screws securely to avoid having to do the job again.

Enough tension should be placed on the shear operating lever spring (300088) Plate 24 so that the movable blade will close when the thrust bar drops off the drum cams. The shear operating lever spring collar (10294) Plate 24 is adjustable so that the required tension can be put on the spring.

The simplest way to remove the shear bracket for inspection is to remove the upper shear operating collar, loosen the shear operating lever setscrew, swing the lever upward so as to clear the operating rod, then withdraw the lever along with the stud from the shear bracket. Remove the two shear bracket screws and lift the bracket up from the dowel pins. By this procedure there will be less parts to assemble when replacing the shear bracket.

Stockings Knit on Coarse Gauge Machines

Some causes of stockings popping out when knitted on coarser gauge machines than the machines are intended for . . . . . .

EDITOR COTTON:

I note that "CONTRIBUTOR No. 6814" would like to know what causes full-fashioned fabric to pop out as he calls it in 3-thread stockings knitted on coarser gauge machines; his question appeared on page 111 of May 1938 COTTON. What he calls "popping out" I take it as meaning that the fabric breaks out in holes when boarded or when the wearer puts on a stocking.

I find in knitting 3-thread hosiery on coarser gauge machines that the trade demands that the stockings have the same appearance as a stocking knitted on finer gauge machines, though it wants a cheap stocking. To try to obtain such a stocking the usual procedure is to knit the stockings very tight, or in other words, increase the number of courses per inch over the number of courses per inch when making a 3-thread stocking on a finer gauge machine.

As most of the coarse gauge machines are old and worn as far as needles, sinkers and dividers, and knocking-over bits are concerned, many of these parts are rough or nicked. A knitter is only limited as to the number of courses that can be knitted into a 3-thread stocking made on a coarser gauge machine, and when constructing a stocking of this type or style he must be guided by the age and condition of the machine. If a 3-thread stocking is knitted too tight for the machine, any roughness whatsoever will break some of the filaments of the silk thread and this later causes holes to break out in the fabric.

In getting a coarse gauge machine ready to knit a 3-thread stocking, the first thing one should do is to polish the needles, sinkers and dividers, and the knocking-over bits to make sure that there is no roughness in these parts that might cause the fabric to cut. The next thing is to re-adjust the catch bar motion, the presser motion, and the needle motion so that the fabric is knitted without undue pressure on these parts.

In other words, set the machine so the stitches will be clear and even and the fabric will knock-over and not load up. A 3-thread stocking does not need as much catch bar pressure, knocking over, or press as when making a heavier weight stocking on coarse machines. By doing this, if there is any roughness the fact that pressure has been taken off these motions will help to avoid the cutting of filaments of the thread.

Holes Caused by Degumming

Holes breaking out in fabric, especially in fine thread stockings, is sometimes caused in the degumming operation in a dyehouse, and I have known where holes in stockings have occurred by using a solution too powerful for the degumming operation. Cases of this kind are rare but I bring this to the contributor's attention so that he can investigate this one cause to help him to solve his trouble.

I have found that holes breaking out in fabric is generally caused by some roughness in the knitting machines and when the holes are breaking out in a style made on several machines instead of only one machine, usually I find that the cause for this is that the stocking is being knitted with too many courses per inch for the particular type or gauge of machine and by taking out some courses per inch the trouble usually disappears.

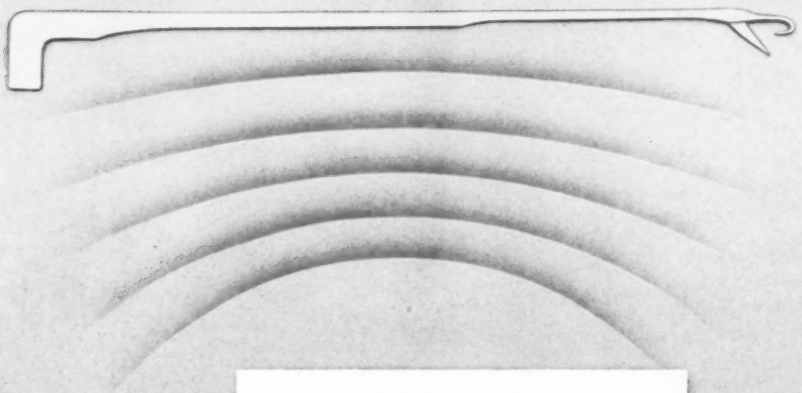
CONTRIBUTOR NO. 6865

"FLATTERING SHAPELINESS"..."FULL OF ALLURE"... are some of the ways manufacturers describe their lines of hosiery. They are accurate descriptions—as women who use these stockings agree. Indeed, it is difficult to exaggerate in writing of the lustrous sheerness and alluring texture of women's hosiery as it is being produced today by many manufacturers. Each year brings new improvements in gages, strength and weights. Better quality at lower cost is the expected thing. Naturally, finer needles are in demand to meet the rising standards of production. That is why so many of the most progressive mills are turning to Torringtons, the machine-made needles with the extra fine machine finish and temper.

TORRINGTON *Needles and Sinkers*

9% replied . . .

"BETTER TEMPER" when asked—Why Do You Use Torringtons?



BETTER TEMPER means that users have found that Torrington Needles possess just the right degree of "spring" or "give" and a complete uniformity of dimensions which makes for long life and smooth, efficient operation in knitting machines.

IT IS a well known fact that Torrington Needles are preferred by many leading knitting mills. The reasons behind this preference were brought to light dramatically in a recent survey conducted by an independent research organization. One of the questions asked a group of Torrington Needle users was, "Why do you use Torringtons?" 9% of this group replied, "We use them because they have 'BETTER TEMPER.'"

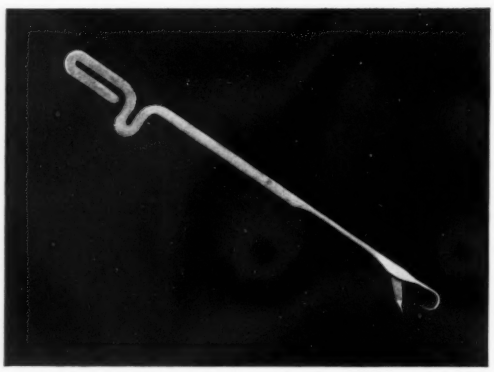
Even though other reasons, such as "best results"..."most uniform"..."proved best" ..."smooth finish" were given for using Torringtons, it is highly significant that so many should give "better temper" as the reason for their preference. It means that the finer temper of Torrington Needles is appreciated by a growing number of knitters throughout the industry.

When you consider that Torringtons are not only machine-tempered but machine-finished and tested—machine-made entirely—it is easy to understand why Torrington users are so enthusiastic in their approval.

MILL MEN'S REASONS FOR PREFERRING TORRINGTON NEEDLES

Proved Best	18.2%	High Quality	12.5%
Best Service	17.0%	Better Temper	9.0%
Best Results	15.9%	Last Longer	6.8%
Most Uniform	14.8%	Economy	2.3%
Best Made	13.6%	Smooth Finish	2.3%
Most Satisfactory	12.5%	Miscellaneous	11.4%

Many of the knitting mill executives surveyed gave more than one reason under the above classification for preferring Torrington Needles. As a result, the figures for the entire list total more than 100%.



Knitters prefer Torrington Needles because they are consistently more uniform. This uniformity is the result of years of painstaking work in the development of special *machine* methods of manufacture.

THE TORRINGTON CO., TORRINGTON, CONN., U. S. A.
Established 1866

The Torrington Company, 1640 Fairmount Ave., Phila., Pa.
The Torrington Co., Inc., 200 Fifth Ave., New York, N. Y.
The Torrington Company, 538 South Wells St., Chicago, Ill.
The Torrington Company, Guilford Bldg., Greensboro, N. C.
The S. M. Supplies Co., 210 South Street, Boston, Mass.
Blelock Manufacturing Co., 913 Locust St., St. Louis, Mo.
E. G. Paules . . . . Bendix Bldg., Los Angeles, Calif.
The Torrington Co., Ltd., 137 Wellington St. W., Toronto 2, Ont.

Factories at: Torrington, Conn. Orange, Mass. Upper Bedford, Quebec Coventry, England Aachen, Germany

TORRINGTON *Latch Needles*

Corroded Needles on Full-Fashioned Machines

AN INQUIRY from a full-fashioned hosiery mill that may be of interest to other knitters was recently received by the editors of COTTON: "We are enclosing a few full-fashioned needles which you will note are badly corroded, and we would be most appreciative if you could give us some information as to what might be the cause of this corrosion. The corrosion did not take place over the entire machine as approximately six sections were free from it. Would there at any time during the processing of the silk, previously to knitting, be a strong acid or alkali used which, if not properly removed from the silk, would cause this corrosion?"

The samples of needles were sent to two full-fashioned hosiery men along with the foregoing inquiry, and their answers are contained herewith as follows:

EDITOR COTTON:

It looks very much as though the soaking of the silk used in this instance is at fault. The pH value of the conditioned silk, if not within a desired band, will cause corrosion of the sinkers and needles, such as these appear to be.

In our own plant we keep this band within the limits of pH 8 to 9.5. We find that any higher values than 9.5, such as pH 10 or more, will cause this corrosion, as this is too alkaline; on the other hand lower values than 7 produce an acid effect which naturally would also give trouble along these same lines.

I suggest that your inquirer have his silk analyzed by a competent firm which specializes in soaking oils. He need send only a small amount of each of the various counts used on this machine. A quarter of an inch depth of yarn on each cone would be sufficient for them to make the test. I would not suggest sending the silk to his own throwster for obvious reasons.

This man might also have a small quantity of his trough water analyzed for pH value as this sometimes will cause the silk value to change sufficiently to create a problem. It has been my experience that generally the welt yarn is at fault, rather than the boot yarn. Usually this count is heavier than the rest and in an effort to make it hygroscopic enough to take moisture under any condition, the pH value has been raised to an injurious degree.

Certain outside conditions will also cause corrosion of the needles, though quite unlikely if plenty of good needle oil is used directly on the needles while the machine is standing idle. I am citing an instance where this actually occurred: The windows of a knitting room had been washed over the week-end, using ammonia in the water together with soap for quick cleaning. The fumes from this solution were sufficiently strong enough to corrode the needles almost immediately and much difficulty was encountered the following Monday from this source.

The use of two important items cannot be stressed sufficiently in a knitting room to prevent any such condition as corrosion of needles and sinkers. Number one is the application of a good solvent to the needles occasionally which will remove any deposits from the silk, such as gum residue or soaking solutions. Number two is the use of a high grade needle oil. A needle oil that has adhering qualities is preferable. In my opinion, this should be a compound oil* as some of the light mineral oils will run off the needles too rapidly and not afford the necessary protection against rust.

CONTRIBUTOR No. 6928

◆

EDITOR COTTON:

It would be almost impossible to definitely place responsibility for the cause of corrosion on full-fashioned needles as shown by samples submitted with your inquiry.

We would be disposed to take a definite position that the corrosion was not caused by acid or alkali used in processing the silk previous to knitting, that is, as related to silk throwing. It is possible that some acid solution used in the emulsion troughs on the knitting machine is responsible for the trouble.

The very fact that the corrosion is not noticeable on the entire machine, and six sections of the machine are free from the condition is sufficient evidence that the trouble is not coming from the throwster, but is one of local condition. It could, of course, be argued that the same knitting solution is being used over the entire machine. This could be possible and still have trouble of acid developing in some of the troughs while others remained neutral or slightly on the alkaline side. A careful acid test of all the heads on the machine might develop this very condition.

There are many things which can cause trouble as shown by samples submitted, most outstanding being acid solution in knitting troughs, acid in lubricating oils, and acid condition of operator on the machine, whose very touch may blacken or corrode all bright parts on the machine. We feel quite certain if careful check-up is made along the line of the foregoing suggestions that the trouble can be isolated as a local one, and probably entirely corrected or at least greatly improved.

CONTRIBUTOR No. 6927

*The use of a compound oil or a straight run mineral oil has long been a debatable subject among mill men. The opinion as expressed here is that of "CONTRIBUTOR No. 6928". For other discussions of compound or straight run mineral oil on textile machinery, see 1938 file of COTTON: May page 128, June page 97, July page 87, and August page 80.—THE EDITORS.

What is more important than anything else in this country in my opinion, is keeping the roads of opportunity open so that our sons and their sons can always reap the reward of meritorious service. — Glenn Gardiner.

A man is known by the company he keeps from keeping.

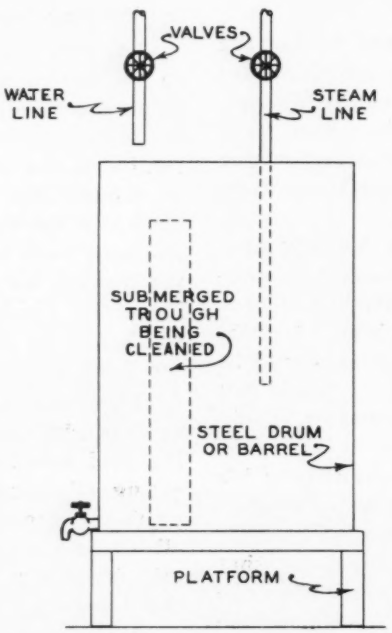
Cleaning Moistening Troughs

By William T. Leggis

EDITOR COTTON:

On page 120 of the June 1938 issue of COTTON, "CONTRIBUTOR No. 6813" asked how other mills manage to keep the moistening troughs of the knitting machines clean from the gummy deposits; this has brought up a problem which all full-fashioned hosiery mills will experience sooner or later.

Previous to the advent of direct knitting silks, this problem was not so serious because even though the gummy deposits did build up, they did so very slowly, and usually a change of felts would correct the entire matter. At most the troughs had to be removed for cleaning once each year. Direct knitting silks, however, are necessarily treated with greater quantities of soaking reagents, oils and alkalis, in order to soften the silk gums and make the fibers very hygroscopic, so that during their fleeting passage through the moistening trough, the threads completely wet out and become plastic, enabling the stitch forming mechanisms of the knitting machine to produce a uniformly knit fabric. This treatment, comparatively drastic, as compared to the older methods of treating silk, in addition to rendering the silk gums hygroscopic and plastic, also partially solubilizes the gums, as a result of which a small percentage of the gums, as well as some of the soaking ingredients, are dissolved from the threads as they pass through the moistening troughs. Even though the percentage of the solubilized gums and oils is slight, there is built up a sufficiently large concentration over a period of months, to coat the sides and porcelain eyelets of the troughs with a slimy deposit which is very difficult, if not impossible, to remove by a hand cleaning, whether the trough is left on the knitting machine, or removed.



The gummy deposit within the trough itself causes little trouble if the glass rods and felts are kept clean. The serious difficulty arises when the porcelain eyelets become clogged with the gummy deposit, which dries to a hard horny substance. This deposit builds up to such an extent that the free passage of the silk yarns through the porcelain eyelets is impeded sufficiently to cause enough drag upon the yarns to vary knitting tensions, and even in extreme cases to cause press-offs. It is true that the gummy deposits also build up on the tension rings, snappers and carrier tubes. However these parts of the machine are easily accessible to the knitter and can easily be cleaned weekly or biweekly with cloth and brush using a mixture of light oil and kerosene. The moistening trough and porcelain eyelets cannot be cleaned in this manner.

It has been our experience to find it necessary to remove the troughs for cleaning. Therefore we arranged to have all our troughs fitted with metal brackets which enabled the troughs to be removed from the machine very easily. Cleaning of the troughs was taken off the hands of the knitters, and delegated to a knitting-room odd job man, whose duty it was to systematically go through the entire mill cleaning moistening troughs. In order not to interfere seriously with the knitters production, 4 spare troughs (sufficient for 8 knitting heads) were substituted for 4 dirty troughs on the knitting machine. The man whose job it was to clean the troughs, helped the knitter with the installation of the troughs and the re-threading of the silk yarns. In this manner the knitter lost practically no time. We found out soon enough that hand cleaning of the troughs was practically impossible. We therefore rigged up a barrel connected with a steam and water line as shown in the accompanying diagram. The barrel was set upon a stand and fitted with a faucet at the bottom, to enable the liquor to be withdrawn when it was no longer fit to be reused. The gummy troughs were submerged in the barrel and approximately ½ per cent of a strong alkali, such as tri-sodium phosphate, sodium carbonate, or caustic soda, added to the barrel. The liquor was then brought to a boil and kept at the boil for approximately 45 minutes. The troughs were then lifted out of the liquor and rinsed clean with a cold water hosing. This treatment completely removed all the gummy deposits and left the troughs and porcelain eyelets in a clean spotless condition. The liquor in the barrel may be re-used for a great many troughs, until it becomes so dirty that it must be replaced with a clean solution. The faucet at the bottom of the barrel facilitates the removal of the dirty liquors.

The cleaned troughs are in turn installed on the knitting machine and 4 more dirty ones removed. Utilizing this system we are able to cover our entire mill with a negligible loss in production. It has been our experience to find it necessary to clean our troughs every six months. The cleaning time of course will vary in different mills depending upon the type of soaking used for the silk.

I would be interested to hear how other mills manage this problem.

TRENDS and HIGHLIGHTS of the KNIT GOODS MARKETS

Hosiery And Underwear Industries Produce More During First Six Months Than Year Ago—Anklets A Feature—Rush Demand For Lightweights And Polo Shirts Continues—Swimsuits Cleaned Up Well—Full-Fashioned Prices Remain For July-August—Retail Sales Fair

Philadelphia, July 15, 1939

CONTINUANCE of the present $6.25 to $6.35 base price for women's full-fashioned hosiery until September 1 was seen when Julius Kayser & Co., which previously had been quoting to June 30 at previous prices, made such an announcement, saying its prices would be continued through July and August. This means since silk has not remained weak that hosiery mill profits may be somewhat small during this time depending on how much, if any, low priced silk is held. Not many in Philadelphia have this. Many are dubious assuming silk remains where it is that advances will be made September 1 but some expect 15c per dozen increases then. Underwear of the cotton knitted types is enjoying a nice spurt and decided comeback. Styling and other details are reasons in this and the present spurt and shortage of supplies of lightweight goods means that probably the coming season will also be active although manufacturers do not have a large amount of heavyweight business. Anklets are a feature with production making new increases each month.

Men's Half-Hose

A feature of the wholesale market this month has been the relatively good demand for better grades of half-hose which some jobbers now assert is in a stronger position than the low-end merchandise. A few lines of cheap half-hose are very active but most knitters report that demand is dull. Production of men's half-hose during May was smaller than during the same month a year previous. During the first five months of this year production of this type hose was also considerably under the same five months in 1938 but some feel that the fall will be better than the same season of a year ago because makers of wool lines have been more active on yarn buying to date than a year ago for the same lines. Crew socks in loud colors are a good number at present and jobbers feel that the elastic short socks will become active not only as at present for warm weather wear but that it will become year-around for some men that like the short sock better than regulation types. Elastic tops are making wide gains this year.

Full-Fashioned

Shipments of full-fashioned women's hosiery during the first five months of this year were larger than for any similar period in the history of the industry, totaling 17,174,485 dozen pairs compared with 16,392,985 in previous year over the same months. Demand this month has been seasonally off, there being no attempt by retailers to buy ahead to beat possible price changes, and most are continuing careful inventory policies. Manufacturers here have been operating about half time waiting for demand to pick up, as they do not pile up stocks of goods for retailers to buy cheaply any more. Retail demand for these lines has been fair, slightly ahead of the same month last year but not as good as it was a month back by any means. Prices are up somewhat at retail due to the branded June 1 increase of 35 cents per dozen but this is not the reason for the lull. Mills are not reaching for silk but are pursuing a conservative attitude toward this commodity, most feeling that if any changes do come these will be toward a slightly lower level. The outlook for August and on is regarded as good from the standpoint of volume but smaller mills here want more money for their goods beginning September 1 and hope branded firms take the lead in doing so.

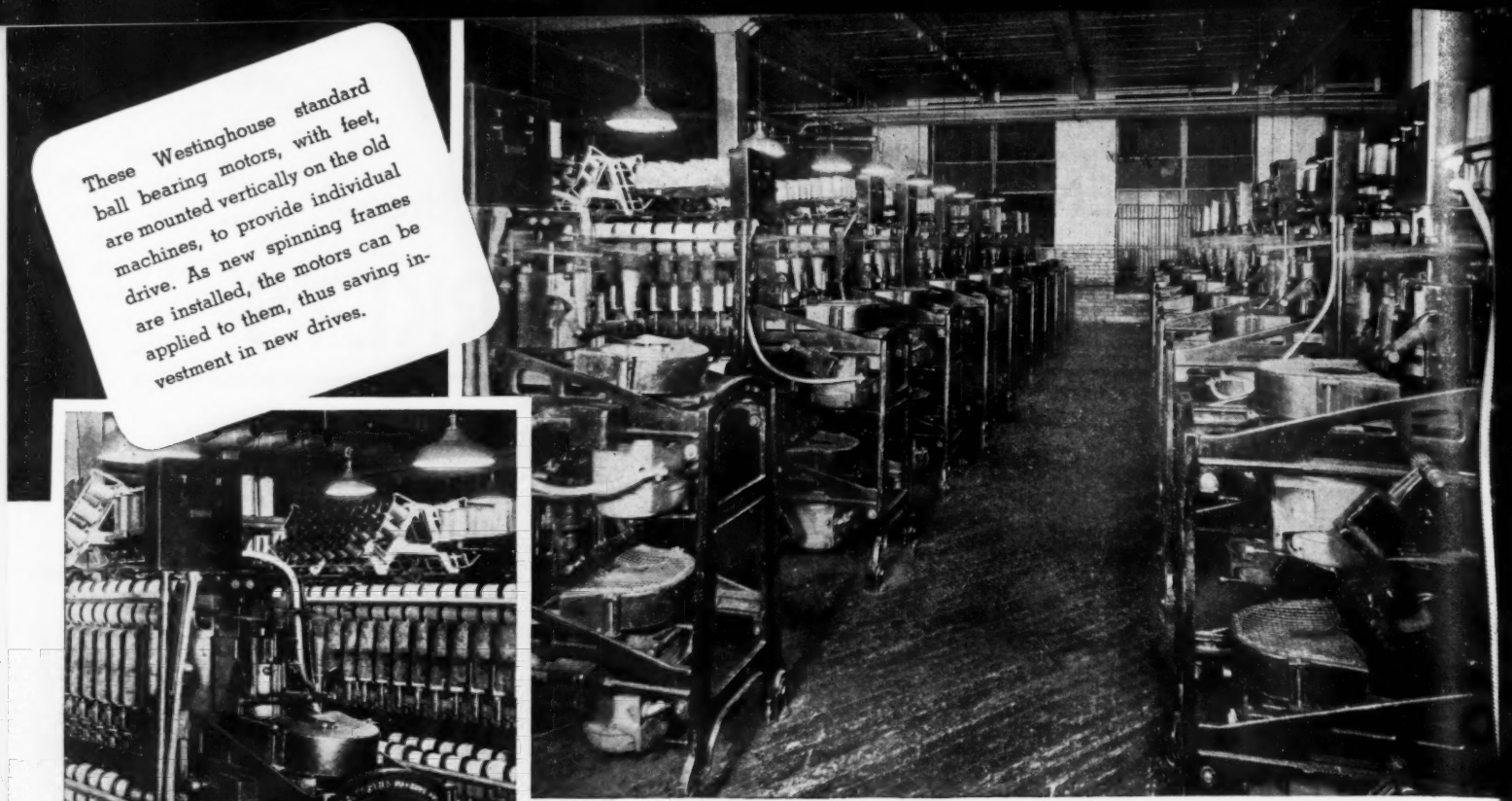
Courtesy Holeproof Hosiery Co.

Seamless

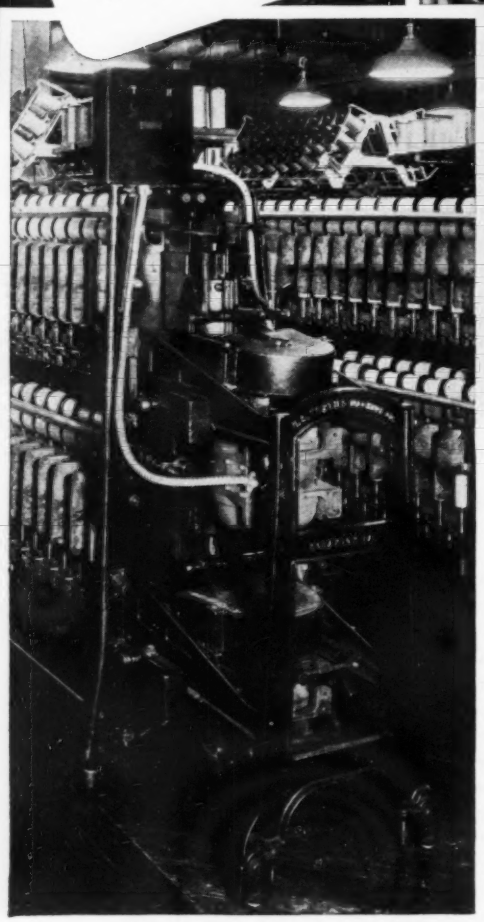
The highlight of the seamless market has been the active demand for anklets and children's lines although shipments of women's seamless stockings have been large and better than a year ago both for the last month on which statistics are available and also for the first five months of the year compared with the first five 1938 months. The market for anklets continues to expand although some had predicted that the saturation point had been reached. One knitter is now featuring anklets as all-year sellers instead of warm weather items. The popular price ranges on anklets are from 10 cents to 25 cents with mercerized yarns used in a large portion of the output. Mercerizers state that yarn shipments to anklet makers have been one of their best outlets for months and they expect this to continue. Duplicate spring business in children's hosiery has been very good. Knitters feel that if wages and hours are raised above the present level advances will have to come in the cheaper seamless lines for next spring.

Underwear

Underwear manufacturers have been enjoying an above-normal volume of business all year and this is more marked at present with a late season spurt in lightweights and sport garments, keeping numerous plants from swinging on heavier garments for fall. There is no question now but that underwear knitters will be able to keep up their activity although the pressure for nearby shipment will abate some as soon as the retail interest in lightweights tapers off. This has been a good season for mens' knit briefs, numerous plants enjoying their largest season in these, and now more underwear mills are becoming style conscious so that for 1940 underwear will



These Westinghouse standard ball bearing motors, with feet, are mounted vertically on the old machines, to provide individual drive. As new spinning frames are installed, the motors can be applied to them, thus saving investment in new drives.



UP GOES PRODUCTION... DOWN GO COSTS!

Hosiery mill cuts power costs 70%, drops thread breakage 28%, boosts production 12%, with modern electric drives

In a Pennsylvania hosiery mill, a power survey was followed by the decision to buy power in order to release steam for plant processes. A substantial investment in new boilers was saved . . . and power costs cut from about 4c to 1.2c per kwh.

Drive equipment was changed from direct current to 126 Westinghouse 2 hp a-c motors, which run 20 days a month, 24 hours a day. Spindle lubrication at high speed is a problem, so with recording ammeters they constantly check variations in load due to incorrect lubrication, and make adjustments accordingly.

By the change-over, and by carefully watching operating conditions, they have reduced load 11%, cut thread breakage 28%, and boosted production 12%.

A power survey may disclose similar chances for savings in your plant. Westinghouse engineers will gladly co-operate. See your local office or, write Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa. Dept. 7-N.

J-90205

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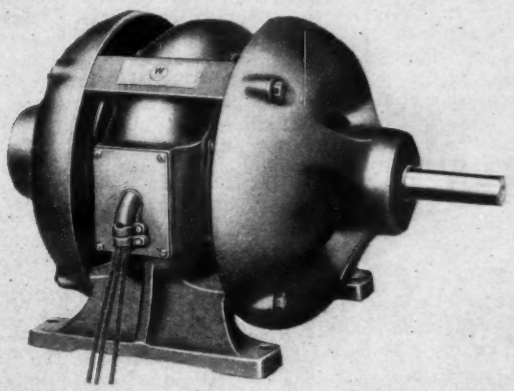
WESTINGHOUSE ELECTRIC

Westinghouse Money Savers

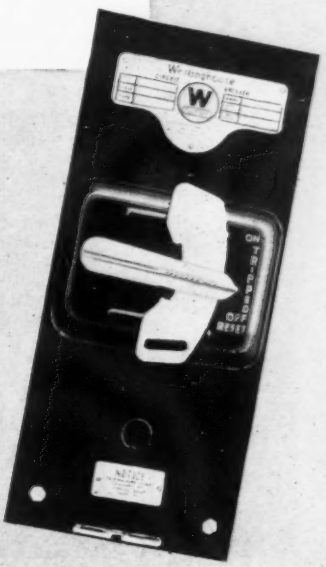
Born and bred for textile service

Westinghouse products and application experience save thousands of dollars every year for many textile mills. Get the benefit of Westinghouse savings in your mill.

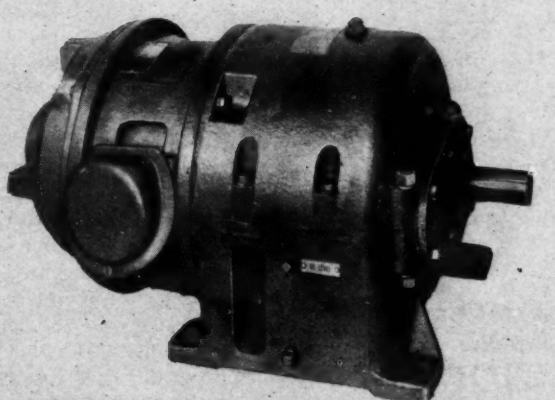
NEW . . . Loom switch — indicating handle shows on, off, tripped . . . lifetime calibration of tripping unit. "De-ion" Arc Quenchers.



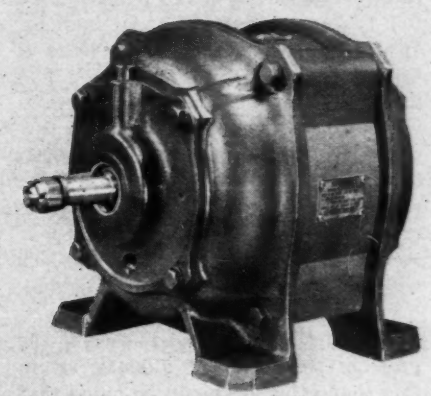
NEW . . . Lint-free Motor, specially designed for textile service. Smooth, slick windings, unobstructed air path, permanently sealed bearings.



STOPS OUTAGES . . . Nofuze circuit breaker eliminates production delays due to fuse outages. Saves many times its cost.



EFFICIENT—QUIET . . . Gearmotors deliver 96% to 98% of high speed motor efficiency for slow speed drives. Ultra-quiet because of new accuracy in gear manufacture.



PROVED . . . Loom motor that stands up under vibration . . . capacity to break in new looms . . . eliminates lubrication grief from wicking of oil by lint.

Motors and Control

be styled in probably the most modern manner in its history. These mills realize they can get back lost markets if they will only offer new things to the user and examples are seen in the knit briefs and sport shirts, polo shirts and other types. The higher cotton and yarn market is also giving buyers of goods the idea of getting fall goods in earlier, but they find many mills tied up with lightweights so that is as yet impossible.

Outerwear

The late season rush in bathing-suits, while not by any means confined to knitted types, has helped knitters, and spinners of worsted yarns have shipped to such mills later this season than ever before. Fall business in sweaters for men's and boys' lines is expanding early and makers of infants' wear have been buying. Women's sweaters have been draggy and their yarn purchases for fall have not been heavy.

Hosiery Shipments Hit New High This Year

With a gain in May over last year, hosiery shipments during the first five months of 1939 rose to 55,354,720 dozen pairs as compared with 51,338,720 dozen pairs in the same period last year. According to a report of the National Association of Hosiery Manufacturers, only half-hose and woolen goods fell behind a year ago. An increase of approximately 800,000 dozen pairs in full-fashioned goods over the first five months of last year is recorded while anklets including slacks went even further ahead by increasing nearly 4,000,000 dozen pairs over a year ago. The report for the first five months indicates that probably a new shipment record in women's full-fashioned goods will be reached this year notwithstanding the curtailment of May and June.

The report also calls attention to the growing popularity of anklets but in this connection it should be noted that in this classification are included men's slacks. The latter type of goods are, along with anklets, proving a market sensation. Hosiery jobbers in Philadelphia report that while men's slacks sold well a year ago it was nothing compared with the movement of such goods this year. The popularity of this type goods began in the South and the West and was late reaching New York and Philadelphia but now that it is here consumers in these important districts are accepting them very favorably. In this connection there are reports that makers of wool half-hose for men plan to take advantage of this popularity of slacks and will produce quite a few numbers of wool slacks but Philadelphia wholesale firms do not believe this part of the country will continue their use in view of the extreme temperatures experienced during recent winters.

FORECAST

(Opinion submitted by COTTON's market correspondent.)

Philadelphia, July 15, 1939

● Textile manufacturers, along with many other lines, feel that a new "appeasement" policy by the Administration is essential if we are to have any major improvement in business, but at the same time they admit that with Government spending coming to the fore again this may be the cause of fair conditions during the balance of the year. The average consumer has money to spend and goods that sell in the lower brackets to fit such purses will go in large volume for the remaining months of the year.

Commodities are not expected to change much but will be firm. Silk has a sinking spell but it has now hardened again so that those who were looking for very cheap silk are making new predictions, somewhat higher than before. But the previous advice that hand-to-mouth buying of silk is yet desirable holds. Cotton is firm and planting of a new crop is the smallest in almost twenty years and yet there are no signs of a run-a-way price movement in that commodity. Rayon is firm but no immediate price changes are being made while in wool there has been a steady to strong tone. Commodities when advanced too fast become quiet and gradually slip back close to the former level.

Textile manufacturers, confronted with paying higher wages under the Federal law this fall are thereby faced with a rather stable commodity market, with a higher labor cost but great consumer resistance to higher retail prices. This means that while volume may be satisfactory for the last half of the year profits will be large only in a very few spots and marginal producers of textiles may see losses.

There has been this summer a shortage of some seasonal lines such as lightweight underwear and polo shirts but the same knitters say they have as yet little ahead for the next season so that this may mean that for fall goods retailers and jobbers may delay coverage until the last minute, rather than plan their needs and buy ahead. This type coverage makes it less profitable for the manufacturer. A seasonal rush may give some a false idea as to the future and many feel the rush in a few lines will not prove the average situation for fall.

Yet on the basis of the first six months underwear manufacturers can be assured of fairly good business so far as volume goes for the remainder of the year. Volume has been ahead of normal. In hosiery the first five months showed a larger shipment than for the same period in any year but with increases especially noticeable in women's full-fashioned, anklets, women's seamless and children's lines. These are expected to continue to show gains for the coming months also but the fact that full-fashioned hosiery prices were not advanced for July-August made profits smaller for mills that owned only high priced silk.

Under these conditions knit goods manufacturers should continue a "safe and sane" policy for the season in buying commodities or yarns and also in making goods for stock.

Circuit Court Holds Hearing in Apex Case

The United States Circuit Court of Appeals in Philadelphia on June 19 reserved decision in the appeal of the American Federation of Hosiery Workers, Branch No. 1, from the jury verdict of $712,000 awarded to the Apex Hosiery Co. for damages done to its plant, machinery and business during the sit-down strike in 1937. In view of the court recessing for the summer it is not believed that any decision will be forthcoming in this case until fall and then the case will undoubtedly go to the Supreme Court regardless of the Circuit Court's ruling. Attorneys for the hosiery union and for the CIO made their chief argument the contention that the anti-trust laws under which the Federal District Court's verdict was brought in, should not apply to labor unions. Counsel for the CIO asked that the Circuit Court "rationalize" the rulings of the Supreme Court and asked that the court decide that labor should be exempt from the provisions of the anti-trust laws.

Attorneys of the union declared that if the Apex decision were upheld it would set a precedent by which employers could invoke the anti-trust laws in all future strikes. They claim that the remedy for the damage to the Apex was in the State Courts and not in the Federal Courts. Counsel for the Apex company cited numerous instances to sustain his position that the invasion of the plant without the request of the employees was a clear violation of the Sherman law. He pointed out that just before the strike began in 1937 there were only eight

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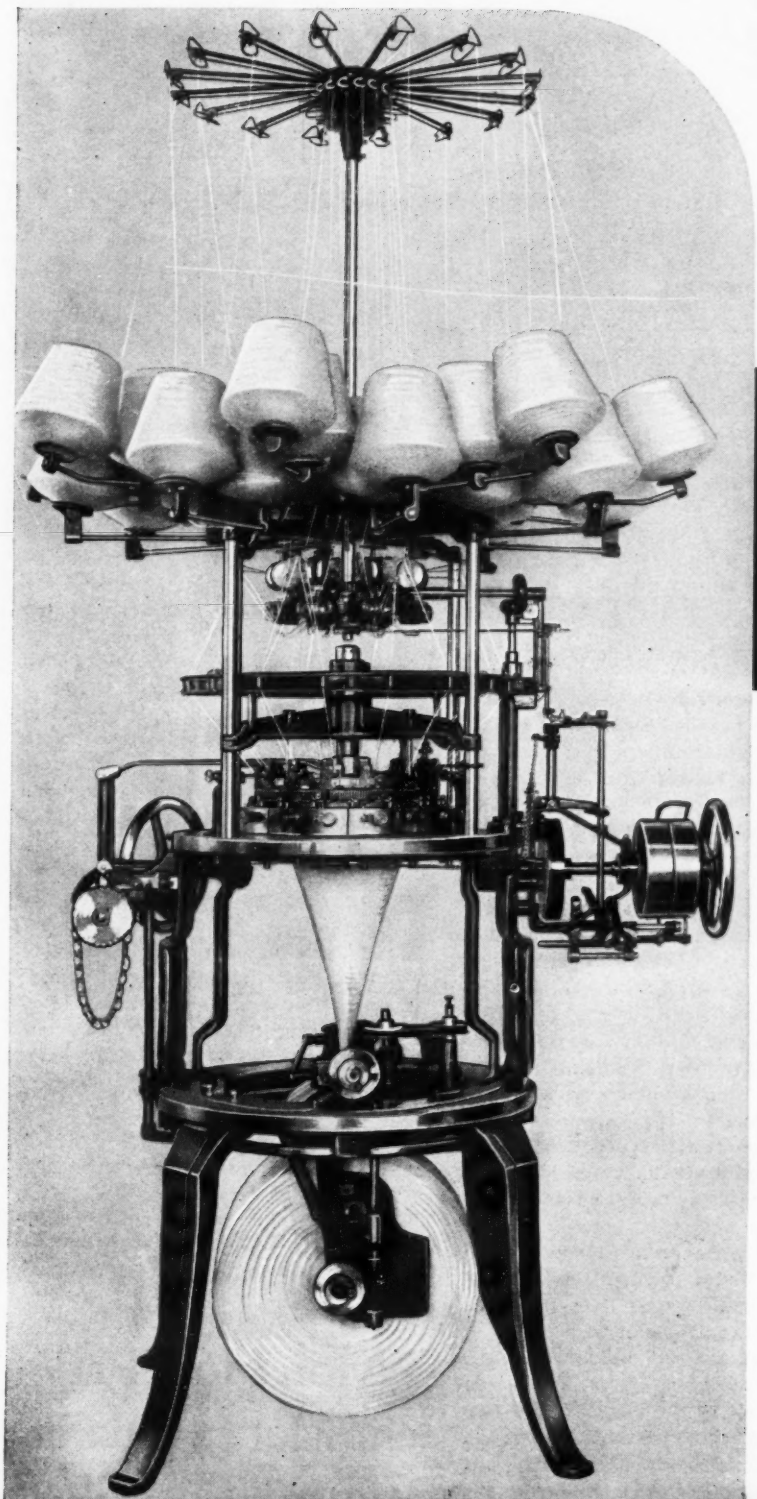

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Photo by John C. Fonville of COTTON.

Above is seen the new community center located at Valdese, N. C., sponsored by the Pilot Full-Fashioned Hosiery Mills of Valdese and contributed to by other mills and business institutions of the city. It is one of the most complete institutions of its kind in the South, costing about $90,000, and erected as a memorial to the late Francis Garrou. It has swimming pool, bad minton and tennis courts, baseball diamond, indoor basketball court with folding seats on the sidelines to seat 700 people, pool tables, reading room, and showers. Membership is not confined to mill employees, though the mill assumes half the cost of membership of the operatives, which is one dollar per month. It has already become the social center of Valdese. Employing a full-time secretary, J. M. Chambers, a former Y. M. C. A. official, Francis Garrou Memorial Hall is a sincere tribute to the memory of a pioneer hosiery manufacturer of the South.

members in the American Federation of Hosiery Workers from the Apex plant. He stressed the illegal acts committed during the sit-down and pointed out that the Wagner law states that industrial strife tends to affect or burden interstate commerce and argued that if the labor law itself says this then the seizure of a plant by a labor union stopping the shipment of 85 per cent of its production in interstate commerce, it is a burden, an interference or an obstruction of interstate commerce.

One of the highlights of the hearing, which consumed an entire day, was the sharp attack of counsel for the CIO upon the United States Supreme Court for what he regarded as "contradictory" rulings which are "impossible to rationalize" in their present state for labor to know whether it is "in or out" of the trust law supervision. It was at this point that one of the Circuit Court Justices asked the labor attorney whether he was in effect asking the Circuit Court to reverse the Supreme Court and the attorney replied, "I would be very glad if this court would reverse itself." He said neither CIO nor any other sincere labor union would condone the unlawful acts shown by the records of the Apex case but he added Apex's remedy was in the State Courts and not in the Federal Courts under the Sherman Act. Some in the industry feel the Apex decision will probably be reversed either in the Circuit Court or the Supreme Court because it establishes a precedent which might flood the Federal Courts with anti-trust law suits against labor unions in a large number of strike cases.

Full-Fashioned Prices Retained

Julius Kayser & Co., taking the lead among the branded full-fashioned concerns, advised retailers that the company would extend present prices on hosiery through July and August notwithstanding the fact it and others have not been able to purchase silk at a price to justify this. It had been hoped by many in the trade that a further rise on branded goods of 15 cents a dozen, to $6.50, would be put into effect as of July 1, but manufacturers evidently felt internal conditions in the market did not warrant this. Jobbers have been reporting that hosiery was coming on the market freely notwithstanding the curtailment talk and several declared that they could buy low-end goods in the gray at about the same price as about a year ago. It is believed this situation in unbranded goods was a factor in causing branded houses to maintain their June 1 prices. Notwithstanding the fact that the standard branded numbers were not changed there will be upward price movements in some of the heavier and also in some of the higher priced numbers of several branded concerns, in general making them conform more closely with advances made on such types by Kayser a month ago. With branded firms maintaining their June 1 prices this means that manufacturers of unbranded will find it difficult to put important price advances into effect during these two months.

Berkshire Knitting Asks NLRB to Dismiss Order

Faced with the possibility of re-instating 300 former employees who went on strike October 1, 1936, and distributing $1,000,000 in back pay, Berkshire Knitting Mills of Reading, Pa., on July 13 filed a 312-page brief with the National Labor Relations Board at Washington, D. C. It asked that an order finding the company guilty of unfair labor practices be dismissed. In this case the hosiery union alleges violation of the Wagner Act in refusing to permit the employees to bargain collectively and in opposing unionization of its plant. The mill's brief was illustrated with photographs of how the lie-down picketers blocked the entrance to the mill, a display of jars of oil similar to the kind thrown through the windows of employees who did not strike, scenes of the massed picketing in front of the mill, damage to the automobile of an employee and the damage to the finishing plant by the use of explosives.

In its brief Berkshire contended that there is no substantial evidence in the record to show that the company dominated and interfered with the administration of the association. William M. Rutter, counsel for the Berkshire employees' association, filed a brief containing 119 exceptions. In its introduction Rutter declared, "If ever an opinion parading under the guise of a solemn judgment of an unbiased quasi-judicial body was ever written which more clearly demonstrates an inverted pyramid of kited facts than the present opinion of this board, it has been our good fortune never to see or hear of it." The conclusion asserted, "It is not for a moment to be believed that this board read the record in this case and reached independent conclusions thereupon. The opinion and proposed order are obviously the handiwork of others to whom the task was delegated."

Nylon Hose Patent Makes Quality Control Possible

It is believed that when the hosiery made from du Pont's new Nylon yarn reaches the market some months hence it will be the subject of a quality control policy on the part of the du Pont

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• THIS picture shows some of the new Class 52800 machines used by Standard Knitting Mills, Knoxville, Tenn.

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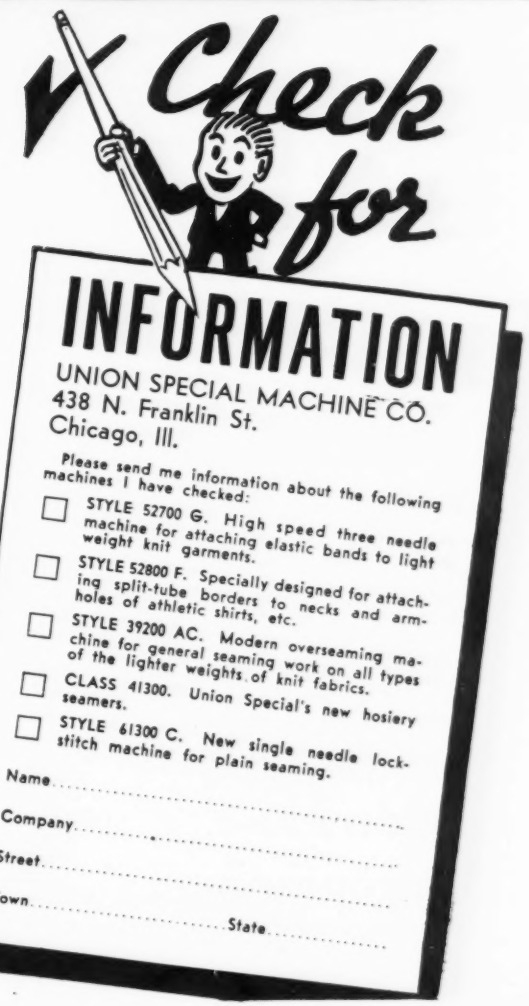
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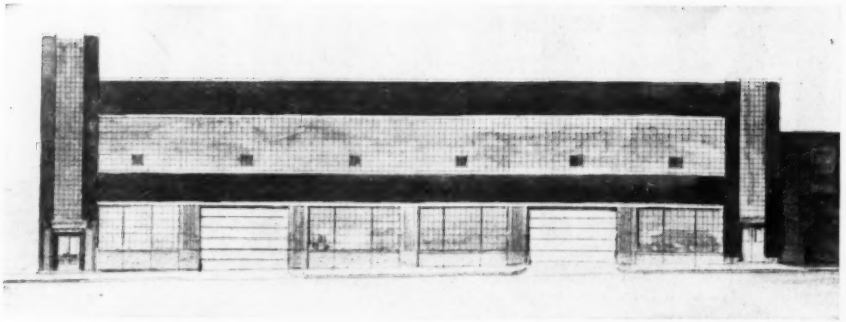

Enlarge and Modernize with New Plant

A modern, two-story brick and glass-brick building now under construction will add 20,000 square feet to the plant of Scholler Bros., Inc., Philadelphia, Pa., manufacturers of textile soaps, softeners, sulphonated oils and finishes. It is on Collins Street in Philadelphia. The upper floor will house modern, air-conditioned laboratories equipped with latest fabric testing apparatus, and the lower floor will be devoted to storage and stock rooms. The building will be occupied about October 1.

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company. In view of the fact the company owns patents covering the fabrication of hosiery as well as the yarn, du Pont is in a position to keep the quality of the hosiery on a high level through being able to license all consuming hosiery mills. This is a situation unusual in the textile business and especially so in synthetic yarns. In addition to the expected regulation of quality it is possible through licensing to use the patents to establish prices for the hosiery at wholesale, although no announcement on this point has been made by the du Pont company. It is reported that Nylon has a very favorable service record in tests made in the sheerer grades that is without precedent. It is expected that a good portion of the first Nylon full-fashioned hosiery which the consumer will be offered will be made from 30-denier yarn and comparable with a two-thread silk in sheerness. Some in the trade believe this hosiery will retail for about $1.35 a pair for 45-gauge and $1.65 for 51-gauge but on this point also no announcement has been made. In the first full year of the new plant's operation at Seaford, Del., it is expected that enough yarn for about 4,000,000 dozen stockings will be available. This amount of hosiery represents a total of less than 10 per cent of all the full-fashioned hose sold last year. It is not believed Nylon yarn is being developed now for seamless hosiery.

Congress Makes Cotton Hose Appropriation

Congress has appropriated $30,000 to continue experiments in the manufacture of cotton hosiery. The money, in addition to $30,000 appropriated last year, is being used by the Bureau of Home Economics of the Agriculture Department in spinning and manufacturing cotton into hosiery which it is hoped will supplant imported silk. Demonstrations seeking public opinion are to be made this summer before women's clubs and other organizations with girls modeling the hosiery. This appropriation recalls that a year or so ago mercerizers of the United States made efforts to popularize full-fashioned hosiery for women made from fine count mercerized yarns but stockings of this type for ordinary street wear have not as yet received widespread consumer acceptance so that most of those yarn producers have recently been devoting their efforts in the full-fashioned hosiery field to the production of goods for sports wear where they have been well received.

Penna. Official Predicts Hose Migration Ended

Wage differentials and other inducements that have caused full-fashioned hosiery manufacturers to move from Pennsylvania to the South eventually will equalize themselves, Richard P. Brown, Pennsylvania Secretary of Commerce, predicted on July 12 at Reading, Pa. Commenting on the hosiery situation, Brown said he wished to study conditions preliminary to efforts by his recently created department to attract new industries to Pennsylvania and to retain industries already here. He said these endeavors would take the form of publicity campaigns and other steps not yet decided upon. This condition has been developing for a long time, he said, so that it cannot be countered in a single stroke. "It may take four or five years but I believe the effects of the advantages which have caused migration ultimately will be dissipated. The wage differential eventually will be leveled out and this trend has already been started by the new law governing hours of workers in southern plants." Mr. Brown was informed that Textile Machine Works has just completed a $100,000 unit and contemplates construction of two more totaling $250,000.

Phila. Hosiery Jobber Reorganizes

Re-organization of the Sullivan Smythfield Co., Philadelphia, wholesalers of hosiery, underwear and other dry goods became effective July 1. All the assets except the premises were transferred to a new partnership called Sullivan's Smythfield, formed by Ward and Curtin Sullivan who were officials in the old company, one of the oldest and largest of its kind in this city. The company had outstanding bank loans and other claims maturing on July 1 in the sum of $935,434. The first mortgage of $300,000 secured upon the company's property and guaranteed by it was also past due. In the re-organization plan this mortgage was extended for a period of three years with interest at 4 per cent annually. Since the re-organization became effective the concern has continued business along the same lines as in the past and no changes in personnel have been made.

Rayon Welts on Silk Hose Used to Reduce Cost

The use of rayon in the foot and welt of women's full-fashioned hosiery is expanding and it is reported that at present the greatest use of rayon in full-fashioned hosiery is current. The high price of silk has been the main reason for this trend which has been accelerated by improvements made in the handling and dyeing of the rayon welt so that it is difficult to distinguish it from the silk in the leg. The yarns being most widely used at the present for this use are reported to be Bemberg rayon and in addition manufac-

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turers have sought high tenacity viscose rayon, both of which are reported to be in short supply. Several rayon producers are working on new yarns to be adapted for hosiery use and the trade expects one of high tenacity manufactured by the American Viscose Corp. Another yarn which may find its place in hosiery is the high tenacity yarn which is to be made by the Celanese Corp. of America at Pearlsburg, Va. There are also expectations that a new synthetic yarn developed by Carbide & Carbon Chemicals Corp. will be satisfactory for full-fashioned hosiery.

Chains May Buy Japanese Hose After Wage Change

Chains of the Woolworth, Kresge and Kress type which laid great stress upon 10 and 15-cent items are regarded by selling agents for southern manufacturers of low-end half-hose as likely to sustain a considerable loss at their men's hosiery counters if the recommended wage minimum of 32½ cents an hour for seamless workers goes into effect. They state that producers of men's low-end hose would necessarily have to raise prices to such a point that the chains would have to sell the present 10-cent items for 15 cents and the 15-cent numbers for 20 cents and this would mean, they declare, that the chains would seek to turn back to Japanese suppliers to provide a 10-cent half-hose. At present Japan is far short of the quota established by exporters there in agreement with the National Association of Hosiery Manufacturers here. During the first five months of 1939 imports of Japanese seamless cotton hosiery increased approximately 100 per cent over the same period a year ago. The average value per dozen on goods shipped from the Orient was only 29½ cents a dozen or less than half the cost of comparable domestic hose. Not all the Japanese hosiery consisted of half-hose because women's anklets and children's socks are generally included in this category. Selling agents believe most of the Japanese goods are going into chain stores outside of the metropolitan areas since boycott propaganda has tended to affect sales in New York, Chicago and other large trading areas. These selling agents feel that as soon as a 32½-cent minimum is set for seamless American mills, imports will quickly spurt and that the Japanese quota will be completely filled.

"Ringless" Hose Question is Revived by New Patent

There has been a revival of discussion of the "ringless" hosiery question which appeared to be settled after the United States Court of Appeals in Philadelphia had supported a lower Federal Court's verdict that the Kaufman patent was invalid, when it became known that the new patent on three-carrier attachments recently assigned to Julius Kayser & Co. would be the subject of royalty claims. Circulars to the trade from Fred C. Good & Sons, Philadelphia manufacturers of ringless tackle, gave the first idea that Kayser will act to protect its rights under the new patent. It is also understood that Textile Machine Works of Reading is also licensed to make the three-carrier attachments under the new patent. William R. Smith, vice-president of Textile Patent Corp., controlling the Kaufman patent which was declared invalid, is understood to be concluding an agreement among the various interests concerned in the ringless proposition. The latest patent issued to Arthur Mutchler and assigned to Kayser refers to the attachment for making "ringless" stockings whereas the Kaufman patent covered the fabric itself. The Textile Machine Works, while licensed to make three-carrier ringless attachments under the recently issued Mutchler patent, has no intention of collecting royalties on such attachments, it was stated by an official of the company. The statement followed the reports that Fred C. Good & Sons, also licensed to make attachments under the Mutchler patent, has circularized full-fashioned hosiery manufacturers seeking to collect a royalty for use of the attachment. The Textile Machine Works spokesman declared it was not their policy to collect royalties for machinery attachments.

Hose Department's Operating Costs Smallest in Store

The women's hosiery department in the average department and specialty stores last year incurred the lowest operating expense in the entire store and at the same time had the highest sales yield per square foot of selling space, according to a report of the National Retail Dry Goods Association. The hosiery department did 3.3 per cent of the total store business and was the only department in the accessories division which bettered its sales volume over the previous year. Department and specialty stores as a whole last year found operating profits approaching the vanishing point. With volume down 7 per cent these stores experienced a drop in earnings from 1.6 per cent in 1937 to 0.3 per cent in 1938. Contributing to the lower earnings, according to the report, were increased unemployment insurance taxes in most states and a rise in the ratio of selling salaries to total sales.

An Eye on the Knitting Mills

New hosiery mills have located at several points in Alabama. Among the towns receiving mills are Jackson, Monroeville, and plans have been made to locate a plant at Cullman. The Jackson mill is said to be modern in every respect, with glass block windows, air conditioning, and oil burning heating system. It contains 20,000 square feet of floor space.

Baker-Mebane Hosiery Mills, Mebane, N. C., a subsidiary of the Baker-Cammack Hosiery Mills, Inc., Burlington, N. C., will construct a modern addition to the plant, 40x90 feet, two story. The addition will be equipped wtih the newest type of machinery for knitting men's hosiery.

The Lewistown (Pa.) plant of the American Viscose Corporation will increase its production to 87 per cent of normal, which will give employment to 250 employees, who have been on furlough for several months.

Another shipment of machinery for the Wyatt Knitting Mill, Sanford, N. C., has been received and the mill has begun operations.

Machinery has been installed in a new hosiery mill at Catawba, N. C., erected by Flake Robinson.

It is reported that a plant is being constructed at Denton, Tex., which will house a rayon underwear mill.

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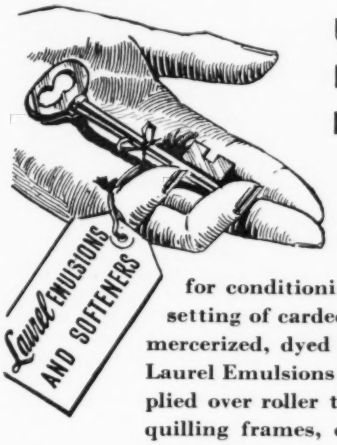

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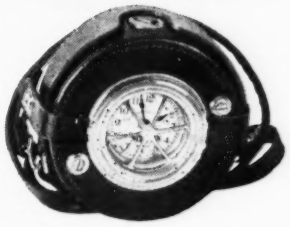

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TRENDS—THE YARN MARKETS

Steadiness The Rule In Textile Fibers And Yarns But No Violent Price Changes—Cotton Yarns Strong On Better Demand—Silk Shows No Signs of Important Drop—Rayon Yarns May Advance Later This Year—Worsted Counts Steady

Philadelphia, July 15, 1939

FEATURE of the yarn markets for the last four weeks has been the rush coverage by underwear knitters of lightweights and polo shirts who found that jobbers and retailers had greatly under-estimated their requirements and to get the seasonal goods on shelves in time manufacturers were rushed. This was the best delivery demand for single combed yarns that spinners have experienced for years. There is another such seasonal rush spot in swimsuits where spinners of single dyed yarns were still busy early in July delivering yarns for 1939 suits when normally spinners and knitters are through with the season just before the Fourth. This year a clean-out of swimsuit stocks made spinners busy later in the season. Silk has been somewhat more active but mills are not speculating heavily. Rayon is much more active than a couple of months back.

Cotton Yarns

Consumers of knitting yarns have been very active over the past month and especially so in the case of manufacturers of lightweight underwear, athletic and polo shirts. There has been a brisk quick delivery business in merchandise of this type and manufacturers in this section have been operating as actively as their facilities will permit. Manufacturers of knit goods upstate report that they have instructions to ship out lightweight garments as fast as they can produce them and on the basis of orders in hand they expect to remain active for about another month at least. This condition in the yarn consuming end has brought about a large demand for both carded and combed knitting yarns for nearby delivery to go into these lines in order to get the goods on retailers shelves as quickly as possible.

New business in cotton yarns has not been large but manufacturers have usually been content to take deliveries on old contracts which are priced one or more cents under the prevailing level. For example, spinners of combed yarn are quoting 30 to 31 cents basis 30s but manufacturers are drawing on their old contracts which are priced as low as 28 cents. Prices of all types of yarns in sympathy with the cotton market and because of this strong nearby demand are advancing, especially so in single combed which is quoted from one-half to one cent higher than a month ago. In the case of carded knitting yarns, quotations are one-half cent higher than four weeks ago but in the super and double carded yarns prices are as strong as in the combed. There are some spinners of double carded 30s that are quoting 28½ cents or only about a cent under the price of combed.

Mercerized yarn shipments while averaging one-third larger than a year ago and larger than any time in the last three years at least are not up to the peak levels reached earlier this year. This slight decline in shipments is seasonal. Shipments were largest during March and April. Consumption of these yarns is large in both the underwear and hosiery trades with numerous manufacturers of both full-fashioned and seamless using more mercerized due to the high price of silk. Makers of full-fashioned women's line are experimenting with either rayon or mercerized in the welt of their cheaper lines in order to cut costs. Prices of mercerized have remained unchanged so far as asking prices are concerned but have been a shade lower in the few important sales reported. Knitters claim they have no trouble buying a couple of cents under the 63 cent level for 60s two-ply ungassed.

Silk

There has been little change in the price of raw silk over the last month, its level at present being within a few cents of that a month ago. At this basis silk is approximately 80 cents higher than early this year and it is approximately 18 cents under the 1939 high mark reached May 16. On this decline hosiery manufacturers have operated more freely than for several months but they have kept purchases within conservative limits and are not inclined to load up with prices at their present level. June takings by American mills were better than expected, amounting to 26,256 bales indicating that talk of curtailment among full-fashioned knitters that month had been somewhat exaggerated. In view of the small stocks of silk reported both in the primary market and in the United States, many in the trade are dubious that any important decline is in nearby prospect. It is pointed out in this connection that total visible stocks at the end of last year amount to 149,778 bales but by the end of June 1939 these had been reduced to about 60,000 bales.

In view of the fact that full-fashioned hosiery manufacturers were unable to raise prices for July and August shipments, it is not believed that they have very large margins based on silk purchased at its present level. Therefore, indications are they will buy this commodity only to cover actual goods ordered and continue on this basis until either silk declines further or they are able to increase prices of both branded and unbranded merchandise.

Rayon

Rayon yarn demand is expanding at a very encouraging rate and leading producers feel that both July and August shipments will exceed the heavy June total. Demand continues to center on the finer deniers with some manufacturers complaining of delays in receiving deliveries on certain numbers. While the price structure is decidedly firmer than it was a few weeks ago and bargain lots of all deniers seem to be a thing of the past, there are no indications of an immediate general price rise. There is a good demand for rayon developing from the weaving trades which are working on their fall merchandise and one result of this activity is in the tight situation in the finer deniers, but because of the high price of silk there are indications a larger interest is about to develop from the knitting trade especially in such uses as making welts on women's full-fashioned where silk was formerly used.

Sales of women's rayon knitted underwear were large in May and June but have dropped off seasonally this month. In view of the small stocks held by retailers demand is expected to be good beginning in August for the rest of the year. Shipments of rayon yarns for the first six months of this year established a new high record, totalling 62 per cent above that shipped during the same 1938 period. Rayon demand from the hosiery trades is expanding, being best of the year at present.

Worsted Yarns

There has been a distinct change in the worsted yarn situation over the month, such manufacturers now being in receipt of a satisfactory volume of fall orders on which they are now working. They are taking larger quantities of worsted yarns on old contracts placed, possibly 5 cents under the prevailing level, and report that they will not place additional yarn business until they can sell their goods on that basis. In view of this situation, many knitters are again turning to the so-called cheapener yarns in an effort to reduce costs but to offset this there are manufacturers that are buying straight worsted yarns this season where they formerly used the cheapeners. They explain this by saying buyers of their goods are trading up this season and after a couple of years use of the cheapeners are returning now to straight worsted. Prices of worsted yarns are practically unchanged from a month ago, while wool and top are several cents higher.

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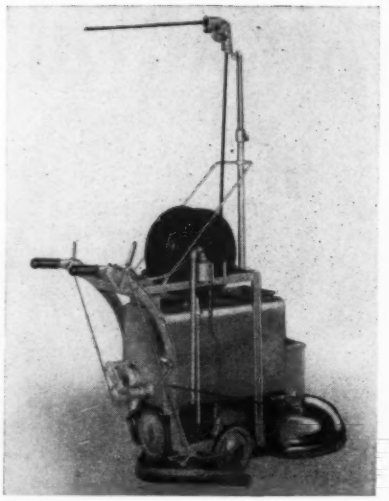

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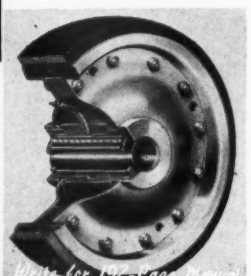

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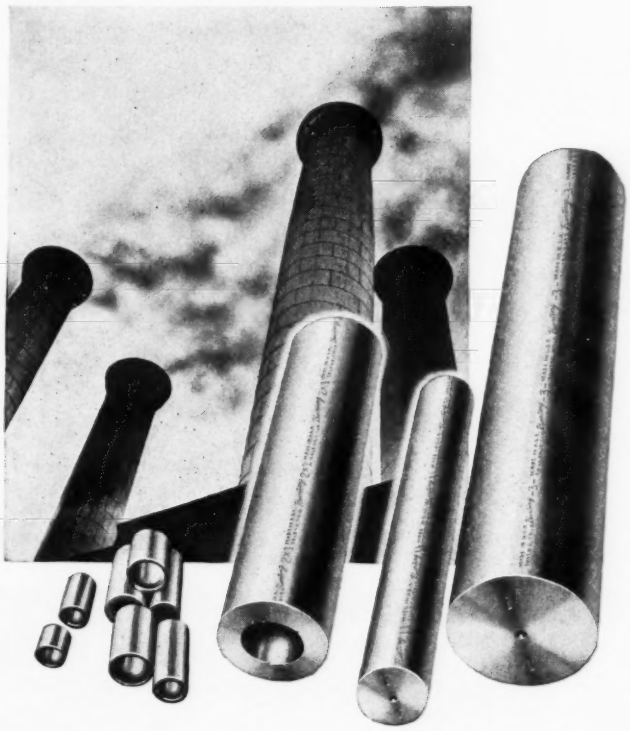

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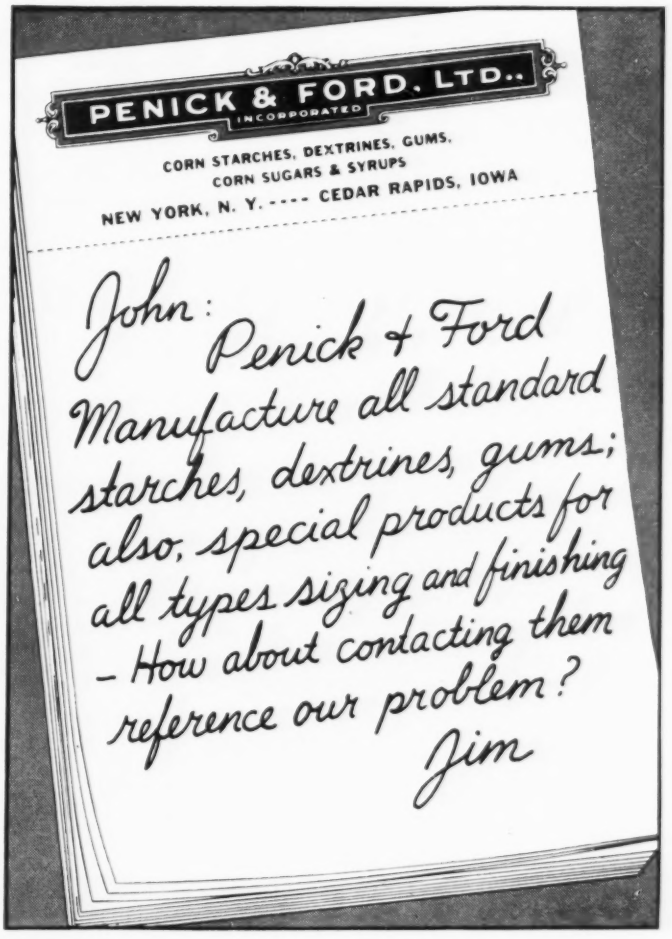
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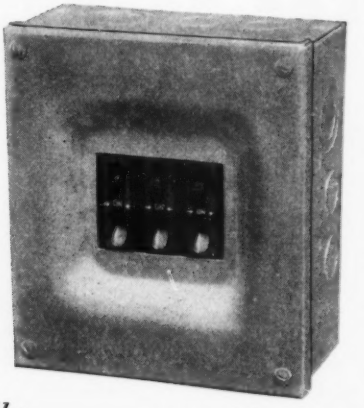

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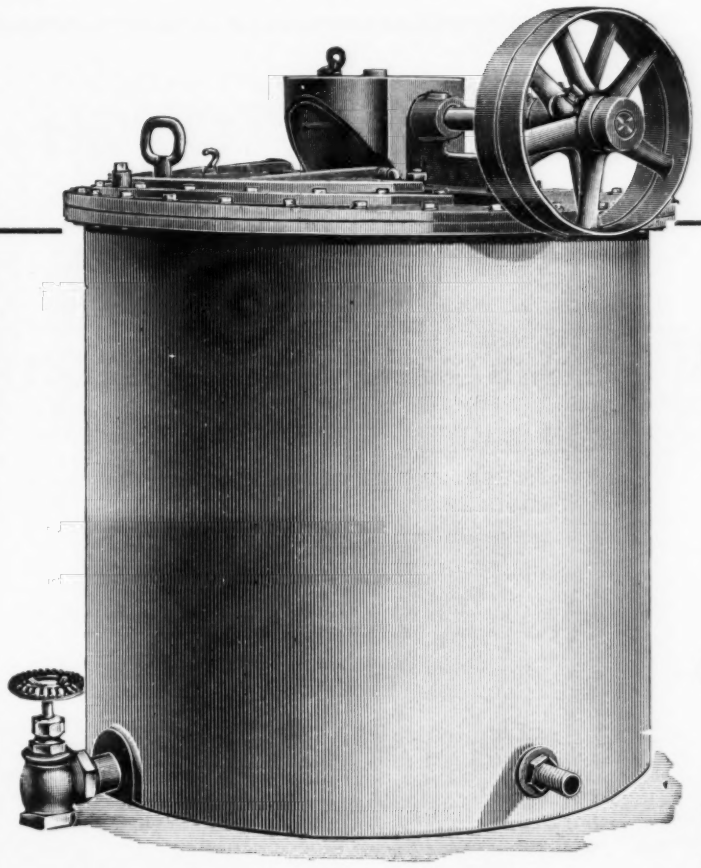

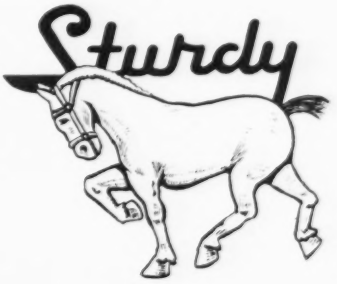

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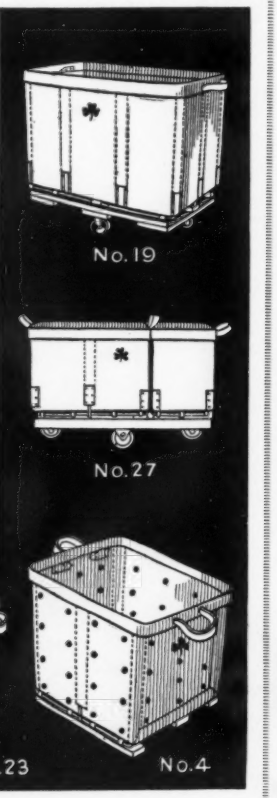

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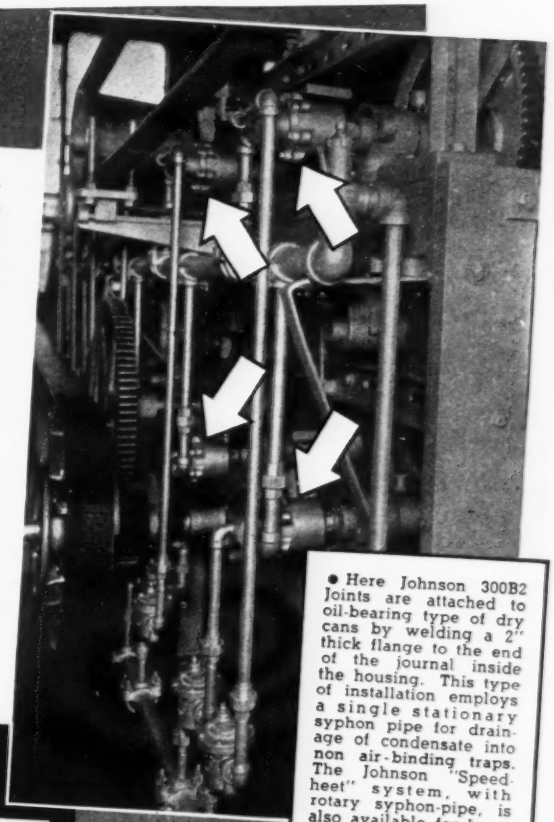

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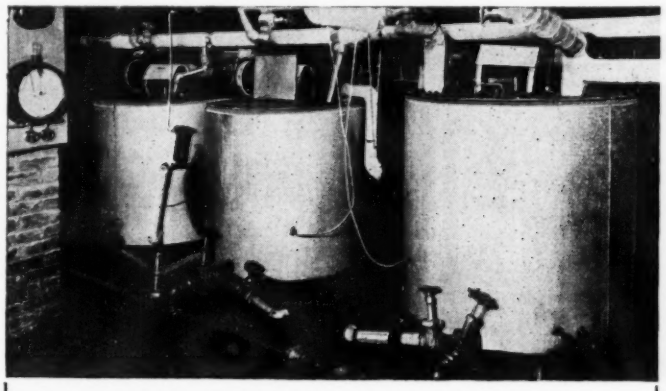

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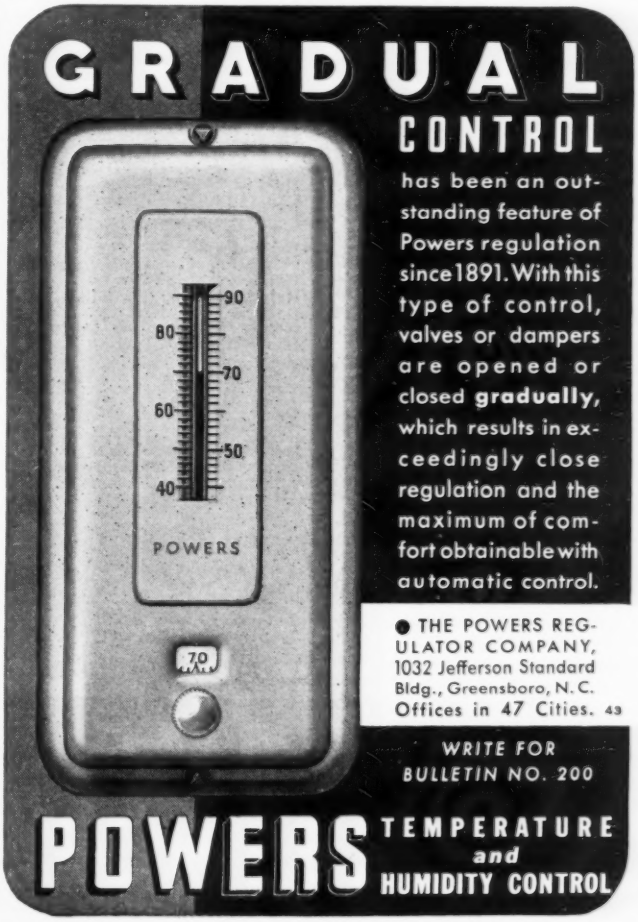
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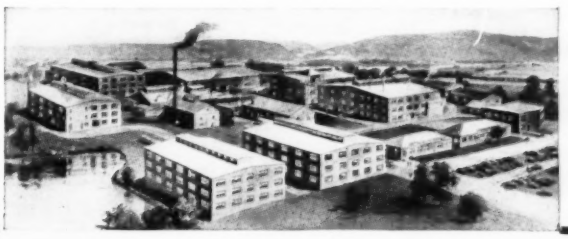

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